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JOHN MACVICAR ANDERSON,

PRESIDENT 1891-94.

*John Macvicar Anderson*

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# INDEX TO VOLUME III. THIRD SERIES.

The names of the authors of the principal Contributions are printed in black type.

## A

- Academy of France at Rome, 225.  
 Acoustics of Public Buildings: Experimental Research, 190.  
 Adam Furniture. *See* FURNITURE.  
**Adams, Cole A.**: Japanese Decorative Art (review), 498.  
**Adams, Maurice B.**: The Form of Building Contract, 415.  
 ADDRESSES.—OPENING ADDRESS OF THE SESSION, 1; TO STUDENTS, 169; on the PRESENTATION OF THE ROYAL GOLD MEDAL, 469. *See also* ALLIED SOCIETIES.  
**Aitchison, Professor**: The Temple of Diana, 54; Origin of the Ionic Volute, 132; Some Reminiscences of Lord Leighton, 264; Restoration of the Geneva Cathedral, 320, 321; Brickwork Tests, 357; Colour in Buildings, 376; Indian Art, 431; Election as President, 462, 473; ADDRESS ON THE PRESENTATION OF THE ROYAL GOLD MEDAL, 469; Monastic and Lay Craftsmen of the Middle Ages, 558.  
**Alberti**: *De Re Edificatoria* presented to Library, 383; his influence on the French Renaissance, 146.  
 ALLIED SOCIETIES.—Relations with the Institute, 100, 450; Prize Drawings lent for Exhibition to, 223; Certificates of Alliance issued to, 392.  
 BIRMINGHAM: Wm. Henman's PRESIDENTIAL ADDRESS, 100; A. Dixon's Paper, SOME OBSERVATIONS ON ANCIENT AND MODERN BUILDING, 297; Officers and Council, 420.  
 BRISTOL: Officers & Council, 420.  
 CARDIFF: Officers & Council, 468.  
 DEVON AND EXETER: Officers and Council, 388.  
 DUBLIN: Officers & Council, 468.  
 DUNDEE: Prize Competitions, 487; Officers and Council, 511.  
 GLASGOW: Presentation of Prizes and Exhibition of Drawings, 136; Officers and Council, 193; Resolution *re* Lord Leighton, 232; Exhibition of Metal-work, 496.  
 LEEDS AND YORKSHIRE: F. D. Bedford's Paper, MODERN DECORATION, 166; E. J. Dodgshun's PRESIDENTIAL ADDRESS, 70; Officers and Council, 388.  
 LEICESTER: Officers and Council, 388.  
 LIVERPOOL: E. Guy Dawber's Paper, SOME THOUGHTS ON OLD FURNITURE, 139; Officers and Council, 468; R. Anning Bell's Paper, THE TRAINING OF WORKERS IN THE APPLIED ARTS, 509.  
 MANCHESTER: Conversazione, 20; J. Holden's PRESIDENTIAL ADDRESS, 34; J. Le Marchant Bishop's Paper, HYGIENIC VENTILATION, 36; C. H. Wyatt's Paper, BOARD SCHOOL PLANNING, 106; J. J. Thomas's Paper, WESTMORLAND SLATES, THEIR GEOLOGY, CHEMISTRY, AND ARCHITECTURAL VALUE, 194; John B. Gass's Paper, AMERICAN ARCHITECTURE AND ARCHITECTS, 229; J. Miller Carr's Paper, PRACTICAL LESSONS DERIVED FROM THE MODERN USE OF TERRA-COTTA, 327; Officers and Council, 420.  
 NEW SOUTH WALES INSTITUTE: Officers and Council, 511.  
 NORTHERN (NEWCASTLE): Joseph Oswald's PRESIDENTIAL ADDRESS, 72; Officers and Council, 388; Proposed Chair of Architecture at Newcastle, 487; W. S. Hicks's Paper, TRACERIES, AND THEIR POSITION IN ARCHITECTURAL DESIGN, 269.  
 NOTTINGHAM: Officers and Council, 420.  
 SHEFFIELD: C. Hadfield's PRESIDENTIAL ADDRESS, 39; Officers and Council, 444.  
 YORK: Officers and Council, 193.  
 AMERICAN ARCHITECTURE AND ARCHITECTS, WITH SPECIAL REFERENCE TO THE WORKS OF THE LATE RICHARD MORRIS HUNT AND HENRY HOBSON RICHARDSON [John B. Gass], 229.  
 American Education [Paul Waterhouse], 440.  
 American Tests of Brick Piers, 351.  
 Ancient and Modern Building, 297.  
 Ancient Buildings, Flora of, 443.  
 Ancient Buildings, Society for the Protection of, and Geneva Cathedral. *See* SAINT-PIERRE-ÈS-LIENS.  
 Anderson, J. Macvicar: Presentation of his Portrait, 58; Trinity Hospital, 92; Obituary of John George Finch-Noyes, 553; List of Subscribers to his Portrait, 553; Presentation of Plate to, 554.  
 Appeal, Tribunal of. *See* TRIBUNAL OF APPEAL.  
 APPLIED ARTS, TRAINING OF WORKERS IN THE [R. Anning Bell], 509; How Architecture and the Sister Arts have suffered through Specialisation, 509; Deterioration of the Artificer, *ib.*; Influence of the Greek and Gothic Revivals, 510; Importance to the Architect of well-trained Artificers, *ib.*; Need for a New Style, and how it might be obtained, *ib.*; Evil Results of the Worship of Originality, *ib.*; Beneficial influence of Master's Individuality upon Pupils, 511; Practical Workshop Training conducted by working Artists required, *ib.*  
 Apprenticeship System, Need for Revival of, 72.  
 Aquitaine, The Domes of, 286, 325, 363.  
 Arch Tests in Vienna, 94.  
 Archaeological Domesday-book, An, 537.  
 Archaeological Survey of India. *See* INDIA.  
 ARCHEOLOGY, HISTORY, AND ART: their relationship in regard to the Practice of Architecture [A. N. Paterson], 27.  
 Architect and Craftsman. *See* APPLIED ARTS; BUILDING, ANCIENT AND MODERN; CRAFTSMEN, MONASTIC AND LAY; WOOD-CARVING.  
 Architects and the Public, 3, 6; Restricted Employment of Architects, 3.  
 Architects' Benevolent Society, 285; Mr. Penrose's Appeal, 330; Annual Meeting, Report, and Balance-sheet, 331; Response to Mr. Penrose's Appeal, 388, 475.  
 Architects' Fees: 5 per cent. inadequate, 71.  
 Architects' Registration Bill, The Institute and the, 2.  
 ARCHITECTS, THE BROTHERHOOD OF: AN ESSAY [Paul Waterhouse], 81.—The isolated Architect an impossibility, 81; An Ancient Heritage, *ib.*; Two essentials, Study and Dignity, 82; Need for Knowledge of Ancient Methods, *ib.*; Desire for the Novel in Architecture shown to be false and inconsistent, 83; Moderation the keynote, *ib.*; The Artistic Relationship of Architects, *ib.*; Influence of Pupilage, *ib.*; Some Evil Practices, 84; Use of Contemporary Work, 85; Social Connection of Architects, 86.  
 Architects' Use of Colour. *See* COLOUR.  
 ARCHITECTURAL ASSOCIATION (LONDON): Extracts from Mr. Carøe's Address, 17; Grant to, for educational purposes, 443.  
 Architectural Design. *See* TRACERIES.  
 Architectural Draughtsmanship and the Royal Academy, 169.  
 Architectural Education. *See* EDUCATION; EXAMINATIONS.  
 Architectural Literature of France. *See* FRANCE.  
 Architectural Sketching, Uses of, 439.  
 Architecture, American. *See* AMERICAN ARCHITECTURE.  
 Architecture and the Institut de France, 549.  
 Architecture, A New History of, 437.  
 Architecture and Wood-carving. *See* WOOD-CARVING.  
 "Architecture for the Public," 32, 69.  
 Architecture, Relations of History and Archaeology to, 27.  
 Architecture, Symbolism in, 500.  
 Armitage, Edward: obituary notice, 464.





Building Law [Professor Kerr], 291, 383. *See also* LEGAL AND REVIEWS.  
 Building Materials. *See* MATERIALS.  
 Building Surveyors under Local Authorities, Architects harassed by, 4.  
 Bulwer, Sir Henry: Dr. Ohnefalsch-Richter's Archæological Career, 132.  
 Burgess, Dr. James: Sixteenth-century Work in India (review), 61, 94.  
 BURGUNDY, MEDIEVAL, NOTES ON SOME REMNANTS OF [P. S. Worthington], 273.—The Old Kingdom of Burgundy: Origin of its Architecture, 273; The Monks' Invasion, 274; Churches: Saint-Bénigne, 275; The Burgundian Narthex, *ib.*; Romainmotier, 276; Vézelay, 277; Saint-Germain, Auxerre, 279; Saint-Étienne, Auxerre, 280; Saint-Père-sous-Vézelay, *ib.*  
 — Crypt of Saint-Germain, Auxerre [R. Phené Spiers], 508.

## C

Cambridge, Educational Facilities at, 64.  
 Capper, S. Henbest, appointed Professor at McGill University, 496.  
 Cardiff, South Wales, and Monmouthshire Society. *See* ALLIED SOCIETIES.  
 Carøe, W. D.: Vote of Thanks to President, 16; The Metrical System, *ib.*; The Falling-off of Fellows, 17; The A.A. Presidential Address, *ib.*  
 Carpenters: Ancient Trade Rules, 72.  
 Carpenters' Hall Lectures 1896, 266.  
 Carr, J. Miller: PRACTICAL LESSONS DERIVED FROM THE MODERN USE OF TERRA-COTTA, 327.  
 Cates, Arthur: Resignation of Chairmanship of Board of Examiners, 283; His Services to Architectural Education, *ib.*; Letter to the Board, *ib.*; The Council's Acknowledgments, 284, 390; New Prize offered by, in the Final Examination, 359, 390; Election of Fellows Question, 528; Letter to Fellows Special Committee, 530.  
 Caws, Frank: The Walls of New-castle-on-Tyne (review), 555.  
 Cement Mortar. *See* BRICKWORK TESTS.  
 Charente, La, Domed Churches of. *See* SAINT-FRONT.  
 Chippendale Furniture. *See* FURNITURE.  
 Chisholm, R. F.: BARODA PALACE, 421, 432; Some Principles of Domical Construction, 445.  
 Choisy, A.: Saint-Front of Périgueux, 362.  
 Christian, Ewan, A Memoir of, 401.  
 CHRONICLE.—The Opening Meeting, 17; The Autumn Examinations, 17, 59, 89, 135; Mr. Carøe's Presidential Address to the Architectural Association, 17; The Durham County Buildings Competition, 19; Illicit Commissions, 19, 60;

Mr. Charles Fowler and the Statutory Board, 20; The late H. G. W. Drinkwater, 20; The late Thomas Cundy and the late E. P. Loftus Brock, 20; The Manchester Society's *Conversazione*, 20; Additions to the Library, 20, 69, 95, 159, 183, 224, 266, 285, 324, 361, 364, 401, 437, 464, 475, 497; Presentation of Mr. Macvicar Anderson's Portrait, 58; Statutory Examination, 59; The late M. Echernier, 60; The late John William Trounson, 60; Monsieur Frantz Jourdain, 60; December Business Meeting, 89; The Tribunal of Appeal, 91; The Trinity Almshouses, 91, 464; The Company of Plumbers' Banquet, 92; A Teaching University for London, 92; The Modified Reservoir at Philæ, 94; Experimental Research in Vienna, 94; Researches in Cyprus, 135, 158, 191; A Retrospect 1842-95: Mr. Falkener's Election, 135; Presentation of Prizes at Glasgow, 136; Drains and Sewers: The Town Clerk of Worcester's Scheme, 137; The Studentships and Prizes, 158; The Royal Gold Medal 1896, 158; Congratulations to Sir F. Leighton, 158; The late Thomas Gildard, 159; "Kypros, the Bible, and Homer," 160; Prizes and Studentships 1896: Deed of Award, 181; Presentation, 183; "The Architectural Literature of France," 183; The late Lord Leighton and the Institute, 221, 282; Monsieur Charles Garnier, 222, 323; The late Richard Morris Hunt, 223; The Prize Drawings at Allied Societies, 223; The late John Thomas Newman, 223; Suggestions in Design, 224; Subjects of Prizes and Studentships 1896-97, 265; The late William Horton, 266; Free Lectures on Building, 266; British Museum Excavations in Cyprus, 266; Marble Verde Antico and the Old Quarries [W. Brindley], 267; The Prize Essays 1896 [Dr. Granger], 281; The President's Mission to Athens, 282; Meeting and Dinner at Manchester, 283, 401, 436, 450, 457; Mr. Arthur Cates's Resignation, 283; Notice Forms under the Building Act, 284; The Revised Conditions of Contract, 284; The Architects' Benevolent Society, 285, 475; Indexes wanted of Building Journals, 285, 383; Mr. Penrose and the French Architects, 324; The Cathedral of Geneva, 324; The Summer Examinations, 359, 463, 492; A New Prize for the Final from Mr. Arthur Cates, 359; Mr. Penrose and the Parthenon, 359; The late Emile Bœswillwald, 360; Ongania's Monograph of St. Mark's, Venice, 361; Nominations for Council and Standing Committees, 381, 400; The late Joaquim da Silva, 382; Brickwork

Tests, 382, 474; The Fund for Experimental Research, 382; The First Edition of Alberti, 383; Books received from Publishers, 383, 401, 475, 496; Mr. Penrose's Tour, 400; Art Committee's Plan for the Holborn-Strand Improvement, 434, 505; Election of Candidates for Membership, 436; The late Arthur Billing, 436; The Council and Standing Committees 1896-97, 462, 474; Expiration of Mr. Penrose's Presidency, 463; The late Edward Armitage, 464; The Royal Gold Medal: Presentation, 473; Drawings, Prints, &c., in the Institute Collection, 473; New Regulation *re* Library Hours, 474, 498; The late John Gethin, 475; The Sanitary Institute Congress, 475; International Competition for Theatre at Kiev, 495, 550; The late William Henry Clark, 495; The late Henry Crisp, 495; The British School at Athens, 495; The "Drain-Sewer" Question, 496; Exhibition of Metal-work at Glasgow, 496; Mr. Henbest Capper's Appointment at Montreal, 496; The Council's Interim Report on the Question of the Election of Fellows, and discussion thereon, 521; The Autumn Examinations, 552; The Temple of Deir-el-Bahari, 552; The late Sir John Everett Millais, P.R.A., 553; The late John George Finch-Noyes [J. Macvicar Anderson], 553; Mr. Macvicar Anderson's Portrait: List of Subscribers, 553.

Chunam, 426, 560.

Clark, W. H.: obituary notice, 495.

Clarke, Max: Report on Brickwork Tests, 333.

Codd, John: Brickwork Tests, 408.

COLOUR, THE ARCHITECTS' USE OF—

I. [Halsey R. Ricardo]. Resourcefulness of Colour to the Architect, 365; Ordinary Architectural Features superfluous and undesirable in modern Streets, 366; Colour required, *ib.*; Convenience, Distinction, and Comfort of Colour, *ib.*; Economy, 367; Materials available, *ib.*; Examples of Colour Decoration, 368; Principles to be observed, *ib.*; Mr. Butterfield's Work, 369.

II. [Christopher Whall]. Misuse or Neglect of Colour by the Architect, 369; The Architect's Methods of dealing with Colour Problems criticised, 370; Some Practical Hints for the Decorator, 371; Treatment of Colour in dimly lighted Interiors, 373; Effects of Lighting: some Experiments, *ib.*; Selection of Materials, 374; Lessons from Nature, 375; Some Points for Improvement, 376.

Discussion: Professor Aitchison, 376; H. Heathcote Statham, 377; John Brett, 379; Aston Webb, 380; Christopher Whall, 381; J. D. Crace, 407.

- Commissioners, Illicit, 19, 69, 522, 527.  
 Committees, Standing: Nominations 381, 400; Annual Reports, 393; Elections, 462, 467; Members appointed by the Council, 474.  
 Compensation, Law of, 403.  
 Competitions, Architects and, 4, 14; Unfair Conditions of, 6, 36, Competitors often to blame 6. Authority of Assessors, 7; The Durham County Buildings, 19; E. J. Dodgshun on, 71; Joseph Oswald on 74; Edward Salmon on, 151; G. Bradbury on, 455; International Competition for Theatre, Kieff, 195, 550; The St. Petersburg Society: Set of Conditions and the Institute compared, 552.  
 Conference at Manchester, 450.  
 Constantinople, Church of the Holy Apostles at, 235.  
 Continental Architects, Relations of the Institute with, 2.  
 Cotton, John: Suggestions in Design, 224.  
 Council, The: Nominations, 381, 400; Annual Report, 389; Annual Elections, 462, 467; Interim Report on the Question of the Election of Fellow 521.  
**Crace, J. D.**: Professor Hindou Petrie on Egyptian Art, 138; The Architect's Use of Colour, 107.  
 Craftsmen and Architects, Relations between. See APPLIED ARTS; BUILDING, ANCIENT AND MODERN; CRAFTSMEN, MONASTIC AND LAY; WOOD-CARVING.  
**CRAFTSMEN, MONASTIC AND LAY, OF THE MIDDLE AGES**: Notes and Comments on the late Anton Springer's Treatise *De Artificibus Monachorum Lucis Medii Aevi* G. Baldwin Brown, 513; Bibliography, 516.  
 — — — Observations on, by Professor Aitchison, 558.  
**Crisp, H.**: obituary notice, 495.  
**Culshaw, A.**: Election of Fellows, 152.  
**Cundy, T.**: obituary notice, 20.  
**Curtius, Professor**: obituary notice [Dr. Murray], 506.  
 Encyclopedia of Works of Architecture in Italy, Greece, and the Levant 480.  
 Cyprus, Researches in: British and German, 158; Dr. Ohmstedt-Richter's, 191; British Museum, 266. See also GRECO-PHœNICIAN ARCHITECTURE IN CYPRUS.  
**D**  
**Da Silva, J. P. N.**: obituary notice, 382.  
**Dawber, E. Guy**: SOME THOUGHTS ON OLD FURNITURE, 139.  
**DECORATION, MODERN** [F. D. Bedford], 166.—The Creative Impulse, 166; Nature, the true Source of Inspiration in Art, *ib.*: Colour and Line, *ib.*; Association of the Sculptor, the Painter, and the Decorative Artist with the Architect, *ib.*: Simplicity, *ib.*; Suggestions for the Adornment of a Small House: Doors and Window frames: Wallpapers, Floors and Ceilings, 167; Choice of Furniture, 168.  
 See COLOUR; THE AIMS OF WOOD-CARVING.  
**DEIR-EL-BAHARI, THE TEMPLE AT** Edward Naville 544.—General Plan: Description of the Three Platforms 544. Their Probable Use and Purpose, 545. The Sculptures, *ib.* Superficial Workmanship of Sculptures and Precautions for their protection 546; Signs of Archaic and Colonial illustrated, 546, 547. General Greek Character of the Building 547; A Paving Tomb in Egyptian Architecture, 548; Idea for the Preservation of the Temple, *ib.*; The necessary Wall, niches, and Court, *ib.*  
**De L'Orange (Piquet), L. H.**: Works. See HISTORY.  
**De Quincy, Quakerism in the Architecture of the French Renaissance.** See HISTORY.  
**De la, Mr. J. Cotton**: Suggestions, 19, 224.  
**Durham Architects and S. T. Aitchison**: Destruction of Buildings, 287.  
**Devonshire House Society.** See ARCHITECTURE.  
**D'Ardenne, Duke of**: The Teaching of Drawing for Architects, 33, 209.  
**Diana, Emma, et al.** See LIST OF THE SOCIETY'S OFFICERS AND THE DR. A. S. Murray, 41. Coins of Hadrian and Antoninus Pius depicting the facade, 41; Pictorial Representation, *ib.*; The Pictorially Between Drum and Pedestal disposed with in the British Museum restoration, *ib.*; Position of the Sculptured Pedestal, 12; Wool's Description and Measurements utilized in the Museum Restoration, *ib.*; Elevation, 13; Perspective View 45. Plan and Elevation of Base, with Stone of Stylobate, 46; Evidence of Roman Coins: Sculpturing of Low-rimmed Drum, *ib.*; New Reading suggested for Pliny's phrase "una scæpa," 47; Wool's Views dissented from, *ib.*; Plan, 18; The Pedestal shown to be sculptured on all four sides, *ib.*; Remains described and illustrated, 48-52.—The archaic Temple: Wool's Discoveries, 52; Sculptured Drum of later Temple copied from the earlier, *ib.*; Various Remains of archaic Temple described and illustrated, 52-54.—Conclusions, 54.  
 Discussion: Professor Aitchison, 54; Professor T. Roger Smith, *ib.*; R. Phené Spiers, 55; Sir Henry Howarth, *ib.*; G. A. T. Middleton, 56; H. Heathcote Statham, *ib.*; F. C. Penrose, 57; Dr. Murray, *ib.*; E. Falkener, 98.  
**Dibdin, W. J.**: Analyses of Samples of Mortar used in the Brickwork Tests, 352; Vote of Thanks to, 357, 364.  
**Dicksee, Bernard**: Brickwork Tests, 357.  
 Dinner, Annual, decided upon 283; The Function at Manchester. List of Guests, Speeches, &c., 457.  
**Dixon, A.**: SOME OBSERVATIONS ON ANCIENT AND MODERN BUILDING, 297.  
**Dodgshun, E. J.**: Opening Address at LEERS, 70.  
 Doomed Churches of Perigord and La Charente. See SAINT-FRONT.  
**Domes, Construction of some Indian**, 432; A few Principles of Domical Construction, 445; Illustrative Diagrams, 447.  
**Domes of Aquitaine**, 286, 325, 363.  
 Domestic Buildings: Decoration of interiors. See DECORATION, MODERN.  
**Douglas, H. F.**: Brickwork Tests, 355; Vote of Thanks to, 364.  
**Doric Columns**: at the Heron, 32; Wooden Origin of suggested, 69.  
**Drawing, H. P. Burke**: Election of Fellows Question, 523, 533.  
 "Drain" and "Sewer" in Law W. Arnold Jolly, 30, 496.  
**Drains and Sewers**: Observations on the Town Clerk of Worcester's Second W. Arnold Jolly, 187.  
**Drawings, and Map, Architectural, and the Royal Academy**, 169.  
**Drawing and Sketching**: Need for cultivation of, 489.  
**Drawing, Printer, &c., in the Library**, 172.  
**Drex, Thomas**: Election of Fellows, 452; The Arts in Manchester, 479.  
**Drinkwater, H. G. W.**: obituary notice Henry Lovetrot, 20.  
**Dr. Cerean Androuet.** See FRANCE.  
**Dundee Institute.** See ALLEN D. SOCIETIES.  
**Durham College**: Proposed Chair of Architecture at, 488.  
**Durham County Buildings**: Competition: The Council's Remonstrance, 19.  
**E**  
 Easement: What an Architect should know of the Law of, 534.  
**Echternier, M.**: The late [L. Rogniat], 69.  
**Edinburgh, R. L. Stevenson's book on**, 476.  
**EDUCATION, ARCHITECTURAL.**—Development, 8, 15, 390; The Aims of the A.A., 17; Manchester, 35; Sheffield, 40; Cambridge, 64; Suffolk, 64; Norfolk, 64; Leeds, 64, 70; Bradford, 67; Castleford, 68; Dewsbury, 68; Huddersfield, 68; Halifax, 69; Harrogate, 69; Hull, 69; Otley, 69; Pontefract, 69; Wakefield, 69.—Teaching University for London: Deputation to Duke of Devonshire, 92; Majority



- of Convocation in favour of, 200; American Methods, 440.—Proposed Chair of Architecture at Durham College, 488; A Word to Students R.I.B.A. *re* Sketching, 489; The Training of Workers in the Applied Arts [R. A. Bell], 509.
- Egypt: THE TEMPLE OF DEIR-EL-Bahari**, 544.
- Egyptian Architecture**, The Proto-Doric Style in, 548.
- Egyptian Art**, Professor Petrie on, 138. *See also* GRÆCO-PHENICIAN ARCHITECTURE IN CYPRUS.
- Election of Fellows**, 12. *See* FELLOWS.
- Ely Cathedral: Iconography of the Lady Chapel**, 504.
- Emden's Law of Building**. *See* REVIEWS.
- Ephesus**. *See* DIANA, TEMPLE OF.
- Essays**, The Institute: wider range suggested, 74; Hints on Essay-writing, 281; Dr. Granger's Criticism of the Premiated Essays 1896, *ib.*
- EXAMINATIONS, THE**.—Development, 2, 8; Number of Applicants, &c., 17, 359, 463; at Manchester, 35; at Newcastle, 75.—**THE PRELIMINARY**: results, 89, 492; **THE INTERMEDIATE**: results, 59, 493; **THE FINAL**: results, 135, 494.—Some recent Questions criticised, 102; New Prize for Testimonies of Study offered by Mr. Arthur Cates, 359, 390; Statistics, 390; The Autumn Examinations, 552.
- Statutory: October 1895, 59.
- Experimental Research**: in Vienna, 94; Science Committee's Work: "Sound in its Relation to Buildings," 190; Appeal for Funds, 333, 356, 357, 362; List of Subscribers to Fund, 383. *See* BRICKWORK TESTS and SOUND IN ITS RELATION TO BUILDINGS.
- F**
- Falkener, E.**: elected Hon. Fellow, 89, 135; Notes on Dr. Murray's Paper The Temple of Diana, 98; Origin of the Ionic Volute, 132; A Retrospect, Fifty Years Ago and Now, 136.
- Fees, Architects'**: 5 per cent. inadequate, 71.
- FELLOWS**: Falling off in Number, 12; Suspension of By-laws *re* election of, suggested, 13, 17; Wm. Henman's Suggestions, 100; Postponement of Nomination of Candidates, 436; The System of Voting for, 451, 452.
- INTERIM REPORT OF THE COUNCIL ON THE ELECTION OF**, 521.
- Discussion*: J. M. Brydon, 522, 531; Wm. C. Street, 522; Robert Williams, 522, 527; Edwin T. Hall, 523, 524; H. P. Burke Downing, 523, 533; Wm. Woodward, 523, 526, 527, 533; H. Heathcote Statham, 523; C. H. Brodie, 524, 526; John Slater, 524; Aston Webb, 524; John Hebb, 525, 526; Beresford Pite, 526, 527; A. S. Flower, 528; Arthur Cates, 528; W. H. Seth-Smith, 531; E. W. Hudson, 532, 533.
- Fergusson's Restoration of the Temple of Diana**. *See* DIANA, TEMPLE OF.
- Ferree, Barr**: THE AVERY MEMORIAL LIBRARY, 188; R. M. Hunt and his work, 223.
- Final Examinations**: results, 135, 494; Arthur Cates Prize for Testimonies of Study, 359.
- Finances**.—Income and Expenditure Account, 397; Balance-Sheet of Ordinary Funds, *ib.*; Trust Funds, 398; Estimate 1896, 399; Auditors' Report and Accountants' Comments thereon, 411; Discussion on, 415.
- Finch-Noyes, John George**: obituary notice [J. Macvicar Anderson], 553.
- Fire Offices, Practice Committee's Negotiations with**, 396, 413.
- Fleet, Valley of the**, 560.
- Fletcher, Banister F.**: Wood-carving, 219.
- Flora of Ancient Buildings** [John Hebb], 443.
- Florence, H. L.**: Saint-Front of Périgueux, 262; Rambles in Rome and Pompeii (review), 477; Donation to the Library, 497.
- Flower, A. S.**: Gothic Masonry (review), 23; Description of Drawings &c. in the Library, 473; Iconography of the Lady Chapel of Ely Cathedral (review), 504; Election of Fellows Question, 528; Heraldry (review), 557.
- Fowler, Charles**: Resignation of Chairmanship of Statutory Board, 20; Acknowledgment of his Services, *ib.*; Manchester Buildings, 456.
- France: M. Charles Garnier's honours**, 223; **THE ADMINISTRATION OF ART IN** [Antonin Barthélemy], 186, 225, 293; **SAINT-FRONT OF PÉRIGUEUX, AND THE DOMED CHURCHES OF PÉRIGORD AND LA CHARENTE**, 233; Public Buildings under Napoleon I., 507; Comte de Franqueville's book on Institut de France, 549.
- FRANCE, THE ARCHITECTURAL LITERATURE OF: A BRIEF HISTORICAL SKETCH AND REVIEW**.—Introduction, 145.—I. ITS SOURCE OF INSPIRATION AND PIONEERS.—Alberti: his *De Re Aedificatoria*, 146; The Library copy, 147; Alberti's Estimate of Vitruvius, 148; Qualifications of an Architect, 149; Requirements of Buildings, *ib.*; on Towers, *ib.*—Serlio: his Literary Works, 150; Rules for Masonry, 151; on Perspective, *ib.*; on the Pantheon, *ib.*—Philibert de L'Orme and Quatre-mère de Quincy's estimate of Alberti and Serlio, Palladio and Du Cerceau, 152.—De L'Orme's Counsel to Architects, *ib.*; his Treatises on Architecture, 154; Sketch of the Good Architect and the Bad, 154-56.—Bibliography, 156; Rare Copies of Alberti and Rossi presented to Library, 183.
- Franqueville, Comte de**, and his work on the Institut de France, 549.
- Freeman, R. Knill**: Provincial Students and the Library, 456; Speech at the Manchester Dinner, 457.
- Frith, W. S.**: WOOD-CARVING AND WOOD-CARVERS, 217.
- Furniture, Choice of**, 167.
- FURNITURE, OLD, SOME THOUGHTS ON** [E. Guy Dawber], 139.—Greek and Roman Furniture, 139; Medieval, 140; Renaissance, 141; The Jacobean Period, Influence of Inigo Jones, *ib.*; After the Restoration, *ib.*; Influence of Sir C. Wren, 142; Chippendale, *ib.*; The Brothers Adam, 143; Sheraton, *ib.*; Decay of Taste early in present century, *ib.*; Modern Craze for Old Furniture, 144; "Grandfather" Clock-cases, *ib.*; Old Mirrors, *ib.*
- G**
- Garbutt, Matt.**: Notes on the Brickwork Tests, 345.
- Garnier, M. Charles**: Congratulations to, on Promotion to Grand-Officier of the Legion of Honour, 223, 323; Banquet in honour of, 323.
- Gass, John B.**: AMERICAN ARCHITECTURE AND ARCHITECTS, 229.
- Geneva, Cathedral of**. Pastor Weber's Photographs, 324; The Restoration Society's Monograph, *ib.* *See also* SAINT-PIERRE-ÈS-LIENS.
- George, Ernest**: nominated as Royal Gold Medallist, 229; Election, 297; Presentation of the Medal, 469; List of some of his executed Works, Drawings, Sketches, &c., 470, 473; Reply to the President's Address, 471.
- Gethin, John**: obituary notice [E. M. Bruce-Vaughan], 475.
- Gildard, Thomas**: obituary notice, 159.
- Glasgow Institute**. *See* ALLIED SOCIETIES.
- Goldthorpe, W.**: Manchester Conference, 452.
- Gothic Masonry**, 23.
- GRÆCO-PHENICIAN ARCHITECTURE IN CYPRUS, WITH SPECIAL REFERENCE TO THE ORIGIN AND DEVELOPMENT OF THE IONIC VOLUTE** [Dr. Max Ohnefalsch-Richter], 109.—Discovery of the Three Royal Tombs of Tamassos, 109; Description of the Tombs, 110, 113; Plan, Sections, and Details, *ib.*; "Fundamental Motive" of the Ornamentation Græco-Phœnician, 111; Date of the Tombs, 112; Details of Construction, 113-20; Lime Mortar used, *ib.*; Some of the Contents, 114; Remarkable Imitation of Woodwork in Stone, 114, 117, 118; Survivals of the Tomb Architecture in modern Cypriote

- Buildings, 115-18; *Sources of Græco-Phœnician Art*, 121; Relation of Græco-Phœnician Art in Cyprus to archaic Greek Art, *ib.*; Stock Theories of the Origin of the Ionic Capital, 122; Derivation from the Egyptian Lotus-flower, *ib.*; Links in the Chain of Development described and illustrated, 122-31; Greek Ionic Capital from Kition, 131.
- Discussion*: Professor Aitchison, 132; Sir Henry Bulwer, *ib.*; E. Falkener, *ib.*; L. Alma Tadema, 133; R. Phœnè Spiers, *ib.*; Sidney Vacher, *ib.*; F. C. Penrose, 134; Dr. Ohnefalsch-Richter, *ib.*
- Further Notes by Professor Baldwin Brown, 163; William Simpson, 164; R. Phœnè Spiers, 165.
- Graham, Alex.**: The Examination Papers, 105; Address to Students, 160; Brickwork Tests, 358; Verandahs, 432; The Manchester Conference, 456; Vote of Thanks to Outgoing President, 463.
- Grahame, James**: Sculptured Stones of Islay (review), 184; R. L. Stevenson on Edinburgh (review), 176.
- Granger, Dr.**: Criticism of the Prize Essays, 281.
- Greek Sculpture, 106.
- Greek Style in Egyptian Architecture, 518.
- Grinthorpe, Lord, on Construction, 25.
- Grinling Gibbons' Wood-carving, 206.
- H**
- Hadfield, Charles**: Opening Address at Sheffield, 39.
- Hall, Edwin T.: The Annual Report, 413; The Institute Finances, 413; Competitions, 454; Election of Fellows, 451, 456, 523, 524.
- Hall, Vice-Chancellor: The Manchester Assize Courts, 458.
- Harvey, Lawrence**: SAINT PIERRE-DES-LAENS, *q.v.*
- Hayward, C. Forster: The Form of Conditions of Contract, 414.
- Hebb, John**: Works of the Roman Marble Masons from the Twelfth to the Fourteenth Century, 32; Destruction of Buildings, 287; The Mysterious Wreck at Nemi, 363; Flora of Ancient Buildings, 113; Public Buildings in France under the First Empire, 507; Election of Fellows Question, 525, 526; Sir John Soane's House and the Building Act, 539; The Valley of the Fleet, 560.
- Henman, W.: The Institute and the Allied Societies, 100.
- Heraldry, Rev. J. Woodward's Book on, 557.
- Hicks, W. S.**: TRACERIES, AND THEIR POSITION IN ARCHITECTURAL DESIGN, 269.
- Hindoo-Saracenic Style. *See* BARODA PALACE.
- History, Archaeology, and Art. *See* ARCHEOLOGY.
- Holborn-Strand Improvement: Art Committee's Plan, 395, 413, 434.
- Holden, John**: Opening Address at Manchester, 34; The Allied Societies and the Institute, 453, 462; Election of Fellows, 453.
- Horton, William: obituary notice, 266.
- Houses, Small: Decoration of Interiors, 166.
- Howorth, Sir Henry: The Temple of Diana, 55.
- Hurlston, E. W.: Election of Fellows Question, 532, 533.
- Hunt, Richard Morris: His Art and Work, 223. *See also* AMERICAN ARCHITECTURE.
- Hydraulic Machine: Description of, used in the Brickwork Tests, 352.
- I**
- Illicit Commissions, 19, 60, 522, 523, 527.
- Indexes wanted of Building Journals, 285, 383.
- India, Archaeological Survey of: Sixteenth-century Work, 61, 94; Memorial to Secretary of State, 392; Reply, 393; Mr. Cousens's Progress Report, 503; List of Ancient Monuments in Bengal, 537; Traditional Origin of Temple of Kabi, 538.
- Indian Art. *See* BARODA PALACE.
- Indian Palace, Plan of. *See* BARODA PALACE.
- Institut de France, First Century of the, 549.
- Institute (i.e., the Professor and the Public, 8; An Appeal to Outriders, 13; Interim Report of the Council on the Election of Fellows, and Discussion thereon, 521.
- Intermediate Examinations: results, 59, 493.
- Ionic Volute: An Example at Jerusalem, 131; Origin of, 163, 164, 165, 228. *See also* GRÆCO-PHœNICIAN ARCHITECTURE IN CYPRUS.
- Ireland, Royal Institute of. *See* ALLIED SOCIETIES.
- Italy, Notes and Impressions in: Report of the Owen Jones Student 1895 (J. J. Joass), 482; Palermo, *ib.*; Monreale, 483; Cefalu, Girgenti, Pompeii, 484; Rome, Assisi, Perugia, 485; Florence, Ravenna, 486; Venice, Torcello, Como, 487.
- J**
- Jacob's (Colonel) Work on Indian Architecture, 425.
- Japanese Decorative Art: Stencils, 498.
- Joass, J. J.: His Tour in Italy as Owen Jones Student 1895, 482.
- Jolly, W. Arnold: "Drain" and "Sewer" in Law, 30; Observations on the Town Clerk of Worcester's Scheme, 137.
- Jourdain, M. Frantz: Presentation of his *L'Atelier Chantrel*, 60.
- JOURNAL, The: Use of, 412; Cost of, 416-418.
- K**
- Kashmir, Temples of (review), 465.
- Kerr, Professor**: The London Building Act (review), 21; Building Law (review), 291, 383.
- Kieff Theatre, International Competition for, 445; Regulations, Plan of Site, &c., 550.
- King, Zeph.: The Annual Report, 418.
- Knox, J. E.**: WOOL-CALVING AND WOOL-CARVING, 214.
- L**
- Lauciani, Professor, on the Wreck at Nemi, 365.
- Langston, H. H.: The Annual Report, 414; The Institute Finances, 418.
- Law relating to Building, 291, 383. *See also* LEGAL.
- Leaning, J.: Principles of Rating (review), 25; Compensation (review), 403.
- Leeds and Yorkshire Society. *See* ALLIED SOCIETIES.
- LEGAL: -
- District Surveyors' Duties of, 444.
- Dunlop, Woodhouse v.*: Sky-signs, 564.
- "Drain" and "Sewer" in Law (W. Arnold Jolly), 30.
- "Drain" or "Sewer," 496, 512.
- Dunsmore v. Marsland*: London Building Act, section 212, 300.
- Lascombe, The Law of: What Architects should know of, 534.
- Eastburn, Mayor of, v. Bradford*: "Drain" or "Sewer," 512.
- Florence v. Paddington Vestry*: "Sewer" or "Drain," 76.
- Hudson v. Cripps*: Landlord's powers to alter premises restricted, 168.
- Light, The Law of, 387.
- London Building Act: Appeal to County Court from Award of Surveyors, 192; Decisions under, 75, 168, 228, 300, 330, 444, 488.
- London County Council v. Gorrell*: Building Law, 330.
- London County Council v. Pryor*: Building Line, 300, 330.
- London County Council v. Richmond*: Lifts in Buildings, 330.
- London County Council v. Savoy Hotel Company*: Sky-signs, 488.
- Marsland v. Green*: Greenhouse used for other purposes, 168.
- Meeson v. Hackney Board of Guardians*: Public Building, 444.
- Meeson v. Simpson*: Section 212 London Building Act, 444.
- Metropolitan Asylums Board v. Tanner*: Public Buildings: Thick-nesses of Walls, 228.
- Norrish v. Nokes*: Obligations of Building Owners, 144.



*Regina v. Bethnal Green Vestry*: "Drain" or "Sewer," 512.  
*Regina v. Tynemouth District Council*: Building Estate: Drainage, 512.  
*Regina v. Vestry of St. Matthew's, Bethnal Green*: Combined Drainage, 488.  
*Richardson v. Vestry of St. Mary, Newington*: "Sewer" or "Drain," 76.  
 "Sewer" or "Drain," 30, 76, 496, 512; The Town Clerk of Worcester's Scheme, 137.  
*Tanner v. Oldham*; Section 212 London Building Act, 75.  
 Tribunal of Appeal: Decision *re* Thicknesses of Walls, 228.  
*Woodthorpe v. Dowling*: Sky-signs, 364.  
 Leicester and Leicestershire Society. *See* ALLIED SOCIETIES.  
 Leighton, Sir Frederic: elected Hon. Fellow, 89; raised to the Peerage, 158; His Death: Biographical Sketch [A. E. Street], 220; His Connection with the Institute, 221; Votes of Condolence, 229, 232, 282; Some Reminiscences of [Professor Aitchison], 264.  
 Lewis, Professor Hayter: Fragments from the Artemisium at Nemi sketched by, 78.  
 LIBRARY, THE.—Additions to, 20, 60, 95, 159, 183, 224, 266, 285, 324, 361, 364, 401, 437, 464, 475, 497, 561; Indexes of Building Journals wanted, 285; Sub-Committee on Drawings appointed, 393; Librarian's Report, 394; Special acquisitions during Session, *ib.*; Exhibition of Drawings, Description by A. S. Flower, 473; New Regulation *re* Hours of Closing, 474, 498.  
 — Loan: Development of, 3, 456; Catalogue, 393.  
 Light, The Law of, 387.  
 Lighting. *See* COLOUR.  
 Lime Mortar. *See* BRICKWORK TESTS.  
 Literature, Architectural, of France. *See* FRANCE.  
 LITERATURE COMMITTEE: Annual Report: The Loan Library, 393; The Texier MSS. *ib.*; Sub-Committee on Drawings in Library, *ib.*; Sessional Papers, 394; Librarian's Report, *ib.*; Annual Election, 462, 468; Exhibition and Description of Drawings, 473; Members appointed by the Council, 474.  
 Liverpool Society. *See* ALLIED SOCIETIES.  
 LOMBARDY, THE GLORY OF [Paul Waterhouse], 295.—Building of the Certosa of Pavia, 295; Luca Beltrami's Monograph of, 296.  
 London Building Act: Appeal to County Court from Award of Surveyors, 192; Publication of Notice Forms for use under Part VIII., 284. *See also* LEGAL and REVIEWS.  
 London Churches, Recent Books on. *See* REVIEWS.

Longstaff's (Dr.) Donation to Brick-testing Fund, 382.  
 Lotus, Egyptian: the Source of the Ionic Volute. *See* GRÆCO-PHENICIAN ARCHITECTURE IN CYPRUS.  
 Lovegrove, H.: The late H. G. W. Drinkwater, 20.

## M

Macalister, R. A. S.: Geometrical Drawing (review), 183.  
 MANCHESTER CONFERENCE AND DINNER: Announcement of, 283, 401; Proceedings at the Conference, 436, 450; List of Guests at the Dinner, 457; Toasts and Speeches, *ib.*  
 — OPENING ADDRESS [Edw. Salomons], 450.—Relationship between the Institute and non-Metropolitan Societies, 450; Advantages of Union, *ib.*; The Evil of Competitions, 451; Why so many Architects are not members of the Institute, *ib.*; The System of Voting, *ib.*; Want of Appreciation of Architecture by the Public, *ib.*; Suggested Means of working a Change, 452.  
 Manchester, Dean of: The Church and the Arts, 458.  
 Manchester Society. *See* ALLIED SOCIETIES.  
 Mant, Major. *See* BARODA PALACE.  
 Marble Masons, Roman, 32.  
 Marble Verde Antico: Discovery of the Old Quarries [W. Brindley], 267.  
 Material, Influence of, on Architecture: Criticism of the Prize Essays on, 281.  
 Materials. *See* PAPERS on BARODA PALACE; BRICKWORK; COLOUR; MOSAIC; STUCCO LUSTRO; SLATES; TERRA-COTTA.  
 Materials, Strength of. *See* BRICKWORK.  
 Mayors and Kings [Paul Waterhouse], 160.  
 Mediæval Craftsmen and Modern Workmen compared, 298. *See also* CRAFTSMEN.  
 MEDIEVAL FABRICATION OF MATERIALS FOR GLASS MOSAIC [Win. Scott], 517.  
 Members elected during Session, Lists of, 101, 192, 297, 468, 540.  
 Membership Statistics, 389, 521, 522.  
 Metrical System of Measurement, Proposed Adoption of, 11; Alternative System suggested, 12, 16.  
 Middleton, G. A. T.: The Temple of Diana, 56; Criticism of Papers set at the Intermediate and Final Examinations, 102; Cost of JOURNAL, 417.  
 MILLAIS, SIR JOHN: a Biographical Sketch [A. E. Street], 541.  
 MINUTES OF GENERAL MEETINGS.—I. (Ordinary) 4 Nov. 1895, 31; II. (Ordinary) 18 Nov., 70; III. (Business) 2 Dec., G. A. T. Middleton on Anomalies in the Examination Papers, 101; IV. (Ordinary) 16 Dec., 139; V. (Busi-

ness) 13 Jan. 1896, Award of Prizes and Studentships, 192; VI. (Ordinary) 20 Jan., Presentation of Prizes, 193; VII. (Ordinary) 3 Feb., 229; VIII. (Ordinary) 17 Feb., 269; IX. (Business) 2 March, 297; X. (Ordinary), 16 March, 327; XI. (Ordinary), 30 March, 364; XII. (Ordinary), 20 April, 388; XIII. (Annual Meeting), 4 May, 411; Auditors' Report, *ib.*; XIV. (Ordinary), 18 May, 443; XV. (Business), 8 June, Annual Elections, 467; XVI. (Ordinary), 22 June, 487; Special, 6 July, 509; Mr. Woodward's Questions *re* Fellows Committee and Canterbury Cathedral, 509; Special, 27 July, Consideration of Interim Report *re* Election of Fellows, 540.  
 Moghul Architecture in Fathpur-Sikri, 61, 94.  
 Moghuls, History of the, 465.  
 MOSAIC, GLASS, MEDIEVAL FABRICATION OF MATERIALS FOR: Recipes from a MS. of the 16th Century in the Barberini Library, with Notes and Translations [Win. Scott], 516.  
 Mortar: Experiments on. *See* BRICKWORK TESTS.  
 Mottram, Alderman: Salford Buildings, 459.  
 Much in Little: Hamlin's *History of Architecture*, 554.  
 Müntz, Eugène: His pamphlet on early Christian Mosaics, 517.  
 Mural Decoration. *See* COLOUR.  
 MURRAY, DR. A. S.: THE SCULPTURED COLUMNS OF THE TEMPLE OF DIANA AT EPHESUS, 41; Reply to the Discussion, 57; Obituary of Professor Curtius of Berlin, 506.

## N

Napoleon I. and Public Buildings in France, 507.  
 National Monuments: Proposed Legislation, 539.  
 NAVILLE, EDOUARD: THE TEMPLE OF DEIR-EL-BAHARI, 544.  
 NEMI, SOME RECENT DISCOVERIES AT [J. Tavenor Perry], 77.—Nibby's Description of the Lake, 77; Fragments from the Artemisium, 78; Traditional Floating Palace, *ib.*; Supposed Ship at Bottom of Lake, 80; Nibby's Theory, *ib.*; Results of Recent Diving Operations, *ib.*; Submerged Roman Landing Stage, *ib.*; Proposals to raise it, *ib.*; Bronze Mooring Rings, &c., discovered, 77-80.  
 — Professor Lanciani on, in the *North American Review*, 363.  
 New South Wales Institute. *See* ALLIED SOCIETIES.  
 Newcastle-upon-Tyne, Walls of, 555; Plan of Heber Tower, 556; The Old Black Gate, 557.  
 Newman, John Thomas: obituary notice, 223.  
 Norfolk, Architectural Education in, 64.

North British Railway Hotel and the Art Committee, 395.

Northern Association. *See* ALLIED SOCIETIES.

# NOTES, QUERIES, & REPLIES.—

"Drain" and "Sewer" in Law [W. Arnold Jolly, 30; Science Committee: Experimental Research, 31; Works of Roman Marble Masons from Twelfth to Fourteenth Century [John Hebb, 32; "Architecture for the Public" [H. Heathcote Statham and Professor Baldwin Brown, 32, 69; Memorial to the late Heber Rimmer, 33; Cambridge a possible centre of education in the Home District, 64; Educational Facilities in the Leeds and Yorkshire District Francis W. Bedford, 64; The Temple of Diana at Ephesus [Edw. Falkener, 98; Sixteenth-century Work in India William H. White, 99; The Institute and its Allied Societies Wm. Henman, 100; The Sheffield Society, 101.—Dr. Richter's Paper: The early Ionic Capital, 163; Wood Imitation, and the early Volute Professor G. Baldwin Brown, 163; Volute at Tell el Hesi (Hebrew) Wm. Simpson, 164; Use and Origin of the Greek Ionic Capital R. Phené Spiers and H. Dobell, 165, 228; Viollet-Le-Duc and the Origin of the Volute, 190; An Ionic Volute at Jerusalem Wm. Simpson, 191; Dr. Richter's Researches in Cyprus, 191.—Experimental Research: "Sound in its relation to Buildings," 190, 361, 363; London Building Act: Appeal to County Court from Award of Surveyors [Wm. Woodward, 192; Public Buildings, Thicknesses of Walls, 228.—Saint-Front of Périgueux Professor Baldwin Brown, A. Choisy, and R. Phené Spiers, 285, 324, 362, 409, 441; The Domes of Aquitaine John S. Quilter and R. Phené Spiers, 286, 325, 363.—Destruction of Buildings [John Hebb, 287; The Mysterious Wreck at Nemi [John Hebb, 363; The Architect's Use of Colour [J. D. Crace, 407; Brickwork Tests [John Codd, 408; The Flora of Ancient Buildings [John Hebb, 443; The Holborn-Strand Improvement [Hon. Secretaries Art Committee], 505; The late Professor Curtius [Alex. S. Murray, 506; Public Buildings in France under the First Empire [John Hebb, 507; Crypt of Saint-Germain, Auxerre [R. Phené Spiers and Percy S. Worthington, 508; "Stucco Lustrò" [Wm. Young and Wm. Scott], 508, 560; National Monuments: Proposed Legislation [A. Barthélemy, 539; Sir John Soane's House and the Building Act [John Hebb, 539; Monastic and Lay Craftsmen of the Middle

Ages Professor Aitchison, 558; The Valley of the Fleet [John Hebb, 560.

Nottingham Society. *See* ALLIED SOCIETIES.

## O

OBITUARY.—Edward Armitage, 464; Arthur Billing, 436; Emile Beswillwald, 360; E. P. Loftus Brock, 20, 389; William Henry Clark, 495; Henry Crisp, 495; Thomas Cundy, 20; Harry G. W. Drinkwater, 20; Mons. Echernier, 60; John Gethin, 475; Thomas Gildard, 159; William Horton, 266; Lord Leighton, 220, 264, 282, 389; Sir John Millais, 541, 553; John George Finch-Noyes, 553; John Thomas Newman, 223; Joaquim Possidonio Narezo da Silva, 382; John William Trounson, 60.

Ongania's Monograph of St. Mark's, Venice, 361.

Oswald, Joseph: OPENING ADDRESS at Newcastle, 72.

Owen Jones Student 1895: His Notes and Impressions in Italy [J. J. Joass, 482.

— — — 1896. *See* PRIZES AND STUDENTSHIPS.

## P

Palmyra and its Tomb Towers, 289.

Parliamentary. — Proposed Removal of St. Mary Woolnoth, 200; A Teaching University for London, 200.

Parthenon Sculptures, The, 161.

Parthenon, The, and Mr. Penrose, 359, 400.

Paterson, A. N.: ARCHEOLOGY, HISTORY, AND ART, 27; The Parthenon Sculptures (review), 161.

Pavia, Certosa of, Building of, 295; Signor Beltrami's Monograph, 296.

Penrose, Francis C.: OPENING ADDRESS, 1; The Temple of Diana, 57; Presentation of Mr. Anderson's Portrait, 58; Origin of the Ionic Volute, 134; Saint-Front of Périgueux, 262; His Appointment on the Parthenon Commission, 282; Elected Corresponding Member of the Société Centrale, Paris, 324; His Mission at Athens, 359; Tour in Greece, 400; The Institute and its Work, 461; Expiration of Presidency, 463.

Périgord, Domed Churches of. *See* SAINT-FRONT.

Périgueux, Saint-Front of. *See* SAINT-FRONT.

Perry, J. Tavorer: SOME RECENT DISCOVERIES at NEMI, 77.

Petrie, Professor Flinders, on Egyptian Art, 138; Restoration of Doorway at Tell el Hesi, 165.

Phile: French Protest against Proposed Submergence of, 94.

Phythian, J. Ernest: The Arts in Manchester, 460.

Pite, Beresford: REVIEW OF WORKS SUBMITTED FOR THE MEASURED DRAWINGS MEDAL AND THE TITE PRIZE, 176; The Annual Report, 414, 420, 443; Election of Fellows Question, 526, 527.

Planning Schools. *See* BOARD SCHOOL PLANNING.

Plumbers' Banquet, 92.

Pompeii, Discoveries at, 480; The Owen Jones Student in, 484; Colour Decoration of Interior of recently excavated House, *ib.*

PRACTICE COMMITTEE: Preparation of Notice Forms under London Building Act, 284; Success of Revised Form of Contract, *ib.* Annual Report: Negotiations with Fire Offices, Party-wall Notices, By-laws under Metropolis Local Management Act, Professional Charges, 396, 413, 414; Annual Election, 462, 468; Members appointed by the Council, 474.

Prendergast, Colonel: Restoration of Geneva Cathedral, 321.

President's Address on Presentation of Royal Gold Medal, 469.

PRESIDENT'S OPENING ADDRESS, THE FRANCIS C. PENROSE, 1.—The Year's Death-roll, 1; The Tribunal of Appeal, 2; The Examinations, *ib.*; The Architects' Registration Bill, *ib.*; The Institute and Continental Architects, *ib.*; The Loan Library, 3. Architects and the Public: Restricted Employment of the Architect, *ib.*; Building Surveyors under Local Authorities, 4; Competitions in general, *ib.*; Competitions and Competitors, *ib.*; Competitions and their Promoters, 6.—The Institute, the Profession, and the Public: The Development of Architectural Education, 8; The Examiners: Suggested Honorarium, 11; The Metrical System of Measurement, *ib.*; The Class of Fellows: An Appeal and a Suggestion, 12.

Vote of Thanks: Aston Webb, 14; W. D. Caroe, 16.

— — — and the Allied Societies, 100.

PRIZES AND STUDENTSHIPS 1896, REVIEW OF THE DESIGNS AND DRAWINGS SUBMITTED FOR.—

I. THE SOANE MEDALLION AND THE GRISSELL MEDAL [Wm. Young, 171.

II. THE PUGIN AND OWEN JONES STUDENTSHIPS [Frank T. Baggallay, 174.

III. THE MEASURED DRAWINGS MEDAL AND THE TITE PRIZE [Beresford Pite], 176.

— — — REVIEW OF THE PREMIATED ESSAYS [Dr. Frank Granger], 281.

— — — Announcement regarding, 158; Works submitted, *ib.*; Deed of Award, 181, 192; Presentation, 183, 193; Drawings selected for Exhibition at Allied Centres, 223; Subjects set for 1896-97, 265; Annual Report, 391.



Probationers, Lists of newly registered, 89, 492.

Proust, M.: Emile Boeswillwald, 360.

## Q

Qualifying Examination for Association: Passed Candidates, 135, 494.

Quilter, J. S.: Saint-Front, 262; The Domes of Aquitaine, 286, 363.

## R

Rating, Principles of, 25.

Reliquary, *The*, 63.

Renaissance Fancies and Studies, 287.

REPORT OF THE COUNCIL FOR THE OFFICIAL YEAR 1895-96, 389.—Statistics of Membership, 389; Obituary, *ib.*; The Examinations, 390; Mr. Cates's Resignation of Chairmanship Board of Examiners, *ib.*; Education, *ib.*; The Royal Gold Medal, 391; Prizes and Studentships, *ib.*; Statutory Examinations, *ib.*; Tribunal of Appeal, 392; Allied Societies' Certificates, *ib.*; The Form of Contract, *ib.*; Competitions, *ib.*; British School at Athens, *ib.*; Indian Archaeological Survey, Memorial *re, ib.*; Reply from the India Office, 393; Foreign relations, *ib.*; Annual Dinner, *ib.*; The JOURNAL, 394; Reports of Standing Committees, *ib.*; Finances, 396; Grant to the A. A., 399.

Discussion: Aston Webb, 412, 417; William Woodward, 412, 415; John Slater, 413, 419; Robert Williams, 413; E. T. Hall, 413, 419; E. A. Gruning, 414; C. Forster Hayward, *ib.*; H. H. Langston, 414, 418; Beresford Pite, 414; C. H. Brodie, *ib.*; Maurice B. Adams, 415; G. H. Fellowes-Pryne, 415; F. Todd, 416; G. A. T. Middleton, 417; Zeph. King, 418.

Research, Experimental: Appeal for Funds, 333, 356, 357, 362; List of Subscribers to Fund, 383. See BRICKWORK and SOUND.

## REVIEWS.—

Bell, Mrs. Arthur: *Elementary History of Art* [A. Barthélemy], 387. Bengal, *List of Ancient Monuments in* [Wm. Simpson], 537.

Birch, George H.: *London Churches* [A. E. Street], 465.

Boissier, Gaston: *Rome and Pompeii*: D. Havelock Fisher's translation [H. L. Florence], 477.

Boyle, E.: *Principles of Rating* [John Leaning], 25.

Browne, J. H. Balfour, and C. E. Allan: *Law of Compensation* [John Leaning], 403.

Bruce, J. Collingwood: *Handbook to the Roman Wall* [A. Barthélemy], 502.

Cousens, Henry: *Archæological Survey of Western India* [Wm. Simpson], 503.

Crickmore, H. Hovell: *Old Chester* [A. Barthélemy], 386.

Daniell, A. E.: *London City Churches* [Thomas Arnold], 404.

Elias, Ney: *Tarik-i-Rashidi* [Wm. Simpson], 465.

Emden, Judge: *Law relating to Building* [Professor Kerr], 291, 383.

Evans, E. P.: *Animal Symbolism in Ecclesiastical Architecture* [Wm. White, F.S.A.], 500.

Fletcher, Banister: *Light and Air* [Wm. Woodward], 96; *History of Architecture* [Professor Baldwin Brown], 437.

Franqueville, Comte de: *Le Premier Siècle de l'Institut de France*, 549.

Fürtwangler, A.: *Masterpieces of Greek Sculpture* [A. Barthélemy], 406.

Glen (R. Cunningham) and Bethune (A. A.): *Law regulating Streets and Buildings in the Metropolis* [Professor Kerr], 21.

Goddard, J. L.: *A Treatise on the Law of Easements* [J. Andrew Strahan], 534.

Graham, R. C.: *Stones of Islay* [J. Grahame], 184.

Griffiths (W. R.) and Pember (F. W.): *London Building Act 1894* [Professor Kerr], 21.

Griffiths, W.: *Trusses of Wood and Iron* [G. L. Sutcliffe], 96.

Hamlin, A. D. F.: *History of Architecture* [Paul Waterhouse], 554.

Harris, R.: *Plane Geometrical Drawing* [R. A. S. Macalister], 183.

Holmes, Sheriton: *The Town Walls of Newcastle-upon-Tyne* [Frank Caws], 555.

Huss, G. M.: *Rational Building* (from Viollet-Le-Duc) [Arthur S. Flower], 23.

James, M. R.: *Sculptures in the Lady Chapel at Ely* [A. S. Flower], 504.

Lee, Vernon: *Renaissance Fancies* [A. E. Street], 287.

Longfellow, W. P. P.: *Cyclopædia of Architecture, Italy, Greece, and the Levant* [R. Phené Spiers], 481.

Maxwell, W. H.: *Drainage Work* [G. L. Sutcliffe], 95.

Petrie, W. M. Flinders: *Egyptian Decorative Art* [J. D. Crace], 138.

Pidgeon, David: *Venice* [A. Barthélemy], 387.

Purchase, W. R.: *Practical Masonry* [Herbert S. Wood], 98.

*Reliquary, The* [William H. White], 63.

Roscoe, E. S.: *Digest of the Law of Light* [Wm. Woodward], 387.

Ruskin, John: *Fors Clavigera* [A. E. Street], 402.

Sharpe, Reginald R.: *London and the Kingdom* [Paul Waterhouse], 160.

Smith, Edmund W.: *Moghul*

*Architecture of Fathpur-Sikri* [Jas. Burgess], 61.

Smith, J. W.: *Law concerning Owner, Building, and Architect* [Wm. Woodward], 96.

Spanton, J. H.: *Science and Art Drawing* [R. A. S. Macalister], 184.

Stevenson, R. L.: *Picturesque Notes on Edinburgh* [James Grahame], 476.

Tuer, Andrew W.: *Delightful and Strange Designs* [Cole A. Adams], 498.

Waldstein, C.: *The Art of Phidias* [A. N. Paterson], 161.

White, W.: *Principles of Art as illustrated at the Ruskin Museum, Sheffield* [A. E. Street], 439.

Woodward, J.: *A Treatise on Heraldry* [A. S. Flower], 557.

Wright, Dr.: *Palmyra and Zenobia* [Wm. Simpson], 289.

**Ricardo, Halsey R.:** *THE ARCHITECT'S USE OF COLOUR*, 365.

Richardson, H. H. See AMERICAN ARCHITECTURE.

**Richter, Dr. Ohnefalsch-:** *GRECO-PHENICIAN ARCHITECTURE IN CYPRUS, WITH SPECIAL REFERENCE TO THE ORIGIN AND DEVELOPMENT OF THE IONIC VOLUTE*, 109, 134, 135, 158, 160, 163; *Kypros, The Bible, and Homer*, 191.

**Romaine-Walker, W. H.:** *WOOD-CARVING AND WOOD-CARVERS*, 201.

Roman Marble Masons, 32.

Roman Wall, The Old, J. Collingwood Bruce on, 502.

Rome and Pompeii, Rambles in, 477. Roofs, Flat and Pitched, 423.

Royal Academy, Architectural Designs at the, and their judges, 170.

Royal Academy, Council of the: Condolence with, on death of Lord Leighton, 229, 232.

ROYAL GOLD MEDAL 1896.—Notice to Members, 158; Nomination of Mr. Ernest George, 229; Election, 297; Address on Presentation, 469; Mr. George's Reply, 471; Exhibition of Gold Medallist's Drawings, 473.

Ruskin, Mr., as Political Economist, 402.

Ruskin Museum, Sheffield, 439.

Russia.—St. Petersburg, Imperial Society of Architects of: International Competition for Theatre, Kieff, 550; Plan of Site, 551; Points of Similarity and Difference between the Russian Society's Conditions of Competitions and the Institute's, 552.

## S

SAINT-FRONT OF PÉRIGUEUX, AND THE DOMED CHURCHES OF PÉRIGORD AND LA CHARENTE [R. Phené Spiers], 233.—De Verneilh's Description, and Conjectures regarding Date of Erection, Model, &c., 233; Plan of St. Mark's, Venice, 234; The old or Latin Church of Saint-Front de-

- stroyed in 1120, 236, 243; Plan and Description of the Five-domed Church, *ib.*; Interior and Exterior, 238-9; Date of Erection of Old Church as told by the Construction, 240; Details, *ib.*; The Five-domed Church and its Construction, 244; M. Abadie's "Improvements," *ib.*; Early Eleventh-century Domed Churches in France, 245; Peculiarities of Construction of Pendentives, Character of Ornament, &c., 246; Absence of Byzantine influence, *ib.*; The Author's Conclusion, 250; Plans and Sections of Pendentive and Vault of Saint-Front before and after Restoration, 252-3.—Périgord Domes, &c., 255; La Charente Pendentives, 259; Plan of the Author's Conjectural Restoration of the Old Church, 261.
- Discussion:* F. C. Penrose, 262, 263; J. S. Quilter, 262; H. L. Florence, *ib.*; The Author, 263.
- — — — — Further Contributions on: Professor Baldwin Brown, 285, 362, 410; John S. Quilter, 286, 363; M. Choisy, 362; R. Phené Spiers, 324, 409, 441.
- Saint-Germain, Auxerre, Crypt of R. Phené Spiers, 508.
- St. Mark's, Venice: Plan, 234; Oroganias's Monograph of, 361.
- St. Mary Woolnoth, Proposed Demolition of: Council's Resolution, 193; Text of the 1892 Petition, 200; Council's Petition against South London Railway Bill, 297, 395.
- St. Paul's, Wood-carving at, 206; Memorial from Art Committee to Clerk Dials, 395.
- SAINT-PIERRE-ÈS-LIENS: THE ANCIENT CATHEDRAL OF GENEVA.—
- I. Louis Vieillot: Description, 301; Piecemeal Restorations of the Past, 302; General Restoration decided upon in 1890, 303; Outlines of the Scheme, *ib.*; Project of the Society for the Protection of Ancient Buildings, *ib.*; Defence of, and some details of the Genevese Scheme of Restoration, 304.
- II. Lawrence Harvey: Pastor Weber's Photographs, 312; Historical Sketch of Geneva, 313; The Cathedral: Optical Illusion, 314; Peculiarity of Plan, *ib.*; Construction of Vaulting, 315; Piers, Capitals, Ribs, 316; Plan, 316, 317; Devices for producing appearance of Vastness, 317; The Corinthian Portico, 319; Longitudinal Section, 320, 321.
- Discussion:* Wm. White, 320, 322; Professor Aitchison, 320, 321; Col. Prendergast, 321; Thos. Blashill, 322; Aston Webb, 322.
- Salomons, Edw.: OPENING ADDRESS AT THE MANCHESTER CONFERENCE, 450. Sanitary Institute Congress, 475. School Planning. See BOARD SCHOOL PLANNING.
- Schultz's (R. Weiz) Drawing of early Ionic Capitals, 163.
- SCIENCE COMMITTEE: Experimental Research, 31, 190, 333, 356, 357, 362, 364, 396, 474. See BRICKWORK TESTS; SOUND IN ITS RELATION TO BUILDINGS.
- Annual Report, 396; Annual Election, 462, 468; Members appointed by the Council, 474.
- Scott, William: MEDIAEVAL FABRICATION OF MATERIALS FOR GLASS MOSAIC, 516; Stucco Lustro, 569.
- Searles-Wood, H. D.: The Examination Papers, 195.
- Serlio's Literary Works. See FRANCE, SESSIONAL & OTHER PAPERS: Address, The Opening [F. C. Penrose], 1.
- Address to Students [Alex. Graham], 169.
- Address on Presentation of Royal Gold Medal, 469.
- American Education [Paul Waterhouse], 440.
- Archaeology, History, and Art [A. N. Paterson], 27.
- Architect, The Brotherhood of Paul Waterhouse, 81.
- Avery Memorial Library, The Barr Ferree, 188.
- Baroda Palace [R. F. Chisholm], 421, 445.
- Brickwork Tests: Reports and Statistics of the First Series of Experiments [Wm. C. Street, Max. Clark, Mary G. Clark, and Professor Upton], 353.
- Buildings, Medieval, Notes on Some Remains of Percy S. Worsley, 273.
- Colour, The Architect's Use of [Henry R. Ricardo and Christopher Whall], 335.
- Den of Babel, The Temple of Babylon [Naylor], 544.
- Ephesus, The Sculpture Column of the Temple of Diana at [Dr. Murray], 41.
- France, The Architectural Literature of. I. Its Source of Inspiration and Pioneers, 115.
- France, The Administration of Art in [A. Parthenay], 186, 225, 293.
- Graeco-Phoenician Architecture in Cyprus, with special reference to the Origin and Development of the Ionic Volute [Max Ohnefalsch-Richter], 109.
- Lombardy, The Glory of [Paul Waterhouse], 295.
- Lord Leighton, P.R.A. [A. E. Street], 220; Reminiscences [Professor Aitchison], 264.
- Mediaeval Fabrication of Materials for Glass Mosaic [Wm. Scott], 516.
- Millais, Sir John [A. E. Street], 541.
- Monastic and Lay Craftsmen of the Middle Ages [Professor Baldwin Brown], 513.
- Nemi, Some Recent Discoveries at [J. Tavenor Perry], 77.
- Owen Jones Student 1895: His Notes and Impressions in Italy [J. J. Joass], 482.
- Report of the Council for the Official Year, 389.
- Review of the Designs and Drawings submitted for Prizes and Studentships 1896 [Wm. Young, Frank T. Baggallay, Beresford Pite], 171.
- Saint-Front of Périgueux, and the Domed Churches of Périgord and La Charente [R. Phené Spiers], 233.
- Saint-Pierre-ès-Liens: The Ancient Cathedral of Geneva [Louis Vieillot and Lawrence Harvey], 301.
- Sketch-book, The Ethics of the: A Word to Students R.I.B.A. [Paul Waterhouse], 489.
- Wood-carving and Wood-carvers [W. H. Romaine-Walker, W. Aumonier, J. E. Knox and W. S. Frith], 201.
- Seth-Smith, W. H.: Election of Fellows question, 531.
- "Sewer" and "Drain" in Law. See LEGAL.
- Shaw-Lefevre, Right Hon. J., on the National Monuments Protection Act, 539.
- Shells Society. See ALLIED SOCIETIES.
- Sheraton Furniture. See FURNITURE, Sec. I.: Baroda Palace, 450.
- Simpson, Professor (Liverpool): The Institute and its Work, 461.
- Simpson, Wm.: The late Thomas Gildard, 159; Volute at Tell el Hesi (Achaia), 164; An Ionic Volute at Jerusalem, 191; Palmyra and its Tomb Towers (review), 289; Temples of Kashmir (review), 165; Archaeological Survey of India (review), 503; An Archaeological Domesday-book (review), 537.
- SKETCH-BOOK, THE ETHICS OF THE [Paul Waterhouse], 489.
- Slater, J.: The Examination Papers, 161; Brickwork Tests, 356; The Form of Conditions of Contract, 413; The Institute Finances, 419; Election of Fellows, 454; Associates and the Voting Power, *ib.*; Country Architects and the Institute, *ib.*; Speech at the Manchester Dinner, 460; Vote of Thanks to Outgoing President, 463; Election of Fellows question, 524.
- SLATES, WESTMORLAND: THEIR GEOLOGY, CHEMISTRY, AND ARCHITECTURAL VALUE [J. J. Thomas], 194.— Geological Position and Extent of the Slate-producing Area of the Lake District, 194; Chemical Composition of Slates, and the action upon them of impure Atmospheres and varying degrees of Temperature, 196; General Description of Westmorland Slate Quarries; Method of preparing the Slates;



Cléavage; Architectural Value, 197-8; Table of Strata, 199; Production in Great Britain, *ib.*; Amount exported, *ib.*

Smith, Edmund W.: his work on the Archæological Survey of India, 61, 94.

Smith, P. Gordon: Brickwork Tests, 356.

Smith, Professor T. Roger: The Temple of Diana, 54.

Soane's (Sir John) House and the Building Act, 539.

Social Relationship of Architects, 86.

Solomon, Lewis: The Examination Papers, 104.

Sound in its relation to Buildings, 190; Schedule of Questions *re*, 361.

Spiers, R. Phenè: The Temple of Diana, 55; Origin of the Ionic Volute, 133; Use and Origin of the Greek Ionic Capital, 165; SAINT-FRONT OF PÉRIGUEUX, AND THE DOMED CHURCHES OF PÉRIGORD AND LA CHARENTE, 233, 262, 263, 324, 409, 441; Baroda Palace, 429; A New Work of Reference (review), 480; Crypt of Saint-Germain, Auxerre, 508.

Springer, Herr: his Latin treatise on Mediæval Craftsmen, 61; Notes and Comments on, 513.

Standing Committees: Nominations for 1896-97, 381; Annual Reports of, 395; Annual Elections, 462, 468; Members appointed by the Council, 474.

Stannus, Hugh: The Wood-carving Papers, 219.

Statham, H. Heathcote: "Architect-ture for the Public," 32; The Temple of Diana, 56; his article on "Contemporary English Architecture," 60; Colour in Buildings, 377; Election of Fellows question, 523.

Statutory Board of Examiners: Chas. Fowler's Resignation of the Chairmanship, 20.

Statutory Examinations, 59, 391.

Stencil Designs by Japanese Artists, 499.

Stevenson, R. L., The late, on Edinburgh, 476.

Strahan, J. Andrew: The Law of Easements (review), 534.

Street, A. E.: LORD LEIGHTON, P.R.A., 220; Renaissance Fancies and Studies (review), 287; Mr. Ruskin as Political Economist (review), 402; The Ruskin Museum, Sheffield (review), 439; London Churches (review), 465; SIR JOHN MILLAIS, 541.

Street, Wm. C.: Report on Brickwork Tests, 333; Election of Fellows question, 522.

Strength of Materials. *See* BRICKWORK TESTS.

Stucco Lustro: Queries regarding, 508; Its Composition, Use, &c. 560.

STUDENTS, ADDRESS TO [Alex. Gra-

ham], 169.—Architectural Pictorial Art: what it lacks, 169; The Burlington House Exhibition and Architectural Drawings, 170; Subserviency of Draughtsmanship in an Architect's Training, *ib.*; Simplicity in Architecture gaining ground, *ib.*; Value of the Teachings and Methods of the Past, 171.

Students, Lists of newly registered, 59, 493.

Students R.I.B.A., A Word to, *re* Sketching [Paul Waterhouse], 489.

Studentships 1896. *See* PRIZES AND STUDENTSHIPS.

Suffolk, Educational Facilities for Architectural Students in, 64.

Sutcliffe, G. L.: Two Practical Treatises (review), 95.

Symbolism, Animal, in Ecclesiastical Architecture, 500.

## T

Tadema, L. Alma: Origin of the Ionic Volute, 133.

Talbot, W. H.: Manchester Improvements, 459.

Teaching University for London: Deputation to Duke of Devonshire, 92; Majority in favour of, 200.

Tell el Hesi (Lachish), Masonry at, 165.

TERRA-COTTA, PRACTICAL LESSONS DERIVED FROM THE MODERN USE OF [J. Miller Carr], 327.—Its Use, General Principles of, 327; Uniformity of Colour in Terra-cotta undesirable, *ib.*; True Functions of the Material, 328; Durability, Cost, 329; How not to use it, *ib.*; Illustrations, *ib.*; Ingress Bell on the possibilities of, 330.

Thomas, J. J.: WESTMORLAND SLATES: THEIR GEOLOGY, CHEMISTRY, AND ARCHITECTURAL VALUE, 194

Thornycroft's Statue of Boadicea, 396.

Tiles and Bricks, Glazed, Use of. *See* COLOUR.

Todd, F.: The Institute Finances, 416.

Tomb Towers of Palmyra, 289.

TRACERIES, AND THEIR POSITION IN ARCHITECTURAL DESIGN [W. S. Hicks], 269.

Tribunal of Appeal: Extended Jurisdiction required, 2; Mr. A. A. Hudson appointed Member of, 91; Important Decision by, 228; Composition of, 392.

Trinity College, Dublin, and the Art Committee, 396.

Trinity Hospital or Almshouses: Memorial against demolition of existing Buildings, 91; Deputation to the Charity Commissioners, *ib.*; Sir F. Leighton's Plea, *ib.*; Proceedings at Enquiry before Commissioners, 92, 395; Decision of the Charity Commissioners, 464.

Trounson, John William: obituary notice, 60.

Tuit, J. E.: Description of the Machine used in the Brickwork Tests, 352.

## U

Unwin, Professor: Reports and Notes on the Brickwork Tests, 348; Further Observations, 353.

## V

Vacher, Sidney: Source of Phœnician and Greek Art, 133.

Vaughan, E. M. Bruce: The late John Gethin, 475.

Vauxhall Bridge, The Art Committee and, 395.

VENTILATION, HYGIENIC [J. Le Marchant Bishop].—I. The Theory, 36; II. The Practice, 37; Guiding Principles, 39.

Verandahs. *See* BARODA PALACE.

Verde Antico Marble and the Old Quarries, 267.

Vienna, Experimental Research in, 94.

Viollet-Le-Duc on Construction, 23; Theory regarding Origin of the Volute, 190.

Violl er, Louis: SAINT-PIERRE-ÈS-LIENS, 301.

Volute, Origin of the. *See* GRÆCO-PHœNICIAN ARCHITECTURE IN CYPRUS.

## W

Waldstein's Art of Pheidias, 161.

Walker, F.: Brickwork Tests, 358, 382.

Walls, Thickness of. *See* LEGAL.

Ward, Dr. A. W.: The Institute and the Universities, 460.

Ware, Professor W. R.: His System of Architectural Education, 440.

Waterhouse, Alfred: Election of Fellows, 456; The Associates and the Voting Power, *ib.*; The Royal Courts of Justice, 458.

Waterhouse, Paul: THE BROTHERHOOD OF ARCHITECTS, 61; Mayors and Kings (review), 160; THE GLORY OF LOMBARDY, 295; American Education, 440; Much in Little (review), 554.

Watt, J. Cromar: Drawings illustrating Dr. Murray's Paper, 43, 45, 46, 48, 52.

Webb, Aston: Vote of Thanks to President, 14; Competitions, 15; Architectural Education, *ib.*; The Institute's Work, 16; The President's Appeal to Outsiders, *ib.*; Geneva Cathedral, 322; Colour in Buildings, 380; The Institute Finances, 417; Election of Fellows question, 524.

Weber, Pastor: his Gift of Photographs, 312, 322, 324, 327.

WESTMORLAND SLATES: THEIR GEOLOGY, CHEMISTRY, AND ARCHITECTURAL VALUE. *See* SLATES.

Whall, Christopher: THE ARCHITECT'S USE OF COLOUR, 369, 381.

White, Wm : Geneva Cathedral, 320, 322; Symbolism in Architecture (review), 500.

White, William H., *Secretary and Editor*: A New Archaeological Quarterly (review), 63; Sixteenth-century Work in India, 99.

Wilkins, General St. Clair: Baroda Palace, 430.

Williams, Robert: The Form of Conditions of Contract, 413, 414; Election of Fellows question, 522, 527.

Wonnacott, W.: Photographs of Brickwork Piers under Test 335, 337, 339, 364.

#### WOOD-CARVING AND WOOD CARVERS.

L. W. H. Romaine Walker: Wood-carving: its place in Architecture, 202; Its degradation in modern "Art Furniture and Decoration," *ib.*; How the Architect can raise it, *ib.*; Relation of the Architect and the Craftsman, *ib.*; Examples of English Fifteenth-century Work, 203; Importance of a preliminary Model, 204; The Art and its Exponent in Medieval and Renaissance Period, *ib.*; Gripping Gibbons's Work and Methods, 206; Examples at St. Paul's, 206-7; Carving applicable to Large and Small Rooms, 207; High and Low Relief Work, *ib.*; Perfection of Skill displayed in Style of Louis XIV., XV., XVI., 208; Treatment and Processes adopted for Work to be gilt or polished, *ib.*; Wood, 209; Hints to the Carver and Designer, 210.

H. W. Vernonier: Some Examples of Old Work, 210; Characteristics of True Wood carving, 211; Different Treatment according to distance from point of view, *ib.*; Carver must be "free," 212; Models undesirable to work from, *ib.*; Charcoal Cartoons preferable, *ib.*; Suitability of Design, 213.

III. J. E. Knox: The Carver's Requirements and Qualifications, 214; Woods, *ib.*; Some Drawbacks, 215; Study of Old Work and Methods desirable, 215; Wood carving Schools a Delusion, 216; A Suggestion to the R.I.B.A., *ib.*; What a Wood-carver should know, *ib.*

IV. (W. S. Frith) Wood-carving and the Sculptor's Art, 217; Capabilities of Wood, 218; Modelling, *ib.*; Knowledge of Form, *ib.*; Selection of Woods, *ib.*; Method of Treatment of Wood Sculpture, *ib.*

Discussion: Hugh Stannus, 219; Banister F. Fletcher, *ib.*

Wood Construction imitated in Stone, 163. See also GRECO-PHENICIAN ARCHITECTURE IN CYPRUS.

Wood, Herbert S.: Stereotomy (review), 98.

Wood's Discoveries at Ephesus. See DANAÏA TEMPLE OF.

Woodward, Wm.: Building Law

(review) 96; The Law of Light (review) 387; The Annual Report, 412; The Institute Finances, 415; Questions re Canterbury Cathedral and Fellows' Committee, 509; Election of Fellows question, 523, 520-8.

Wren's Churches, 404.

Wright's (Dr.) Travels in Palmyra and Zinjibar, 280.

Wyatt, C.H.: BOARD SMOKE PLANS, 106.

#### Y

York Society. See ALFRED SUTTONS.

Young, Wm.: *History of Woods*—CONTINUED FROM THE SAME VOLUME AND THE CORRECTION HERE 171, "STRENGTH OF WOODS," 508.

#### ILLUSTRATIONS.

Portrait of Mr. J. Maxwell Anderson, *First President of Institution*. Capital and Base from the Archæological Temple of Diana at Ephesus (front) (p. 52).

Plan of the Cathedral of Geneva (front) (p. 310).

Longitudinal Section Cathedral of Geneva (front) (p. 320).

Baroda Palace, Plan of First Floor (front) (p. 424).

— First Election at Nymroud (front) (p. 428).

— Wood Piece (front) (p. 448 and 449).

— Dining Hall and North Porch (front) (p. 448 and 449).

— Bronze Statue, Main Staircase (front) (p. 448 and 449).

— Upper Part of Entrance Hall (front) (p. 448 and 449).

— Terrace in No. 2 Courtyard (front) (p. 448 and 449).

THE SCULPTURED COLUMNS OF THE TEMPLE OF DANAÏA AT EPHESUS. 11.

Coin of Hadrian and Antoninus. 11.

Conjectural Restoration: Elevation, 43; Perspective view, 45; Plan, 48.

Base, with Stone of Stylobate, 46.

Sculptured Pedestals and Drums now in British Museum, 49, 51.

Capital and Base from the Archæological Temple (front) (p. 52).

Archæological Ephesian Capital, now in British Museum, 53.

SOME RECENT DISCOVERIES AT NEMI, 77.

Bronze Ring and Pile Head, 77.

Fragments from the Artemesium at Nemi, 78.

Bronze Mooring Ring, recovered from the Lake of Nemi, 78.

Ancient Bronzes recovered from the Lake of Nemi, 79.

#### MEASUREMENTS (continued).

GRECO-PHENICIAN ARCHITECTURE IN CYPRUS: WITH SPECIAL REFERENCE TO THE ORIGIN AND DEVELOPMENT OF THE IONIC VOLUTE, 109.

Lotus Column, 109.

Tomb No. 3: Plan and Sections, 110.

Volute from Tomb No. 3, 115.

Wooden Capital from a Modern Village House in Cyprus, 116.

Ancient Window from Tomb No. 3, 117.

Modern Wooden Window in Cyprus, 117.

Anient Base in Stone from Tomb No. 3, 118.

Modern Wooden Belt from Cyprus, 118.

Modern Wooden Lock, Cyprus—open and closed, 118.

Clay Model of Sanctuary discovered at Hama, 119.

Halter Capital from Kition, 120.

Halter Capital from Amathus, 121.

Capital from Egyptian Wall-painting, 123.

Plaster Assyrian Plate, Greco-Phœnician, from Tadmor, 123.

Silver Fatera found at Nymroud, 125.

Plaster Fatera found at Olympia, 125.

Fragment of Gold-plated Silver Gilt, Greco-Phœnician, Tadmor, 125.

Isolate of Windows, 123.

Greco-Phœnician Capital from East in Assyrian of Babylon, 123.

Clay Volute Column, Eastern Acropolis, 124.

Capital from Hama, 125.

Capital from Nymrod, 125.

Relief from Phœnicia, 125.

Ivory Carvings from Nymroud, 125.

Volute from Tomb No. 2, 125.

Impress from an Assyrian Relief, 125.

Capital from Myra, 125.

Capital from the Heraion at Olympia, 125.

Ionic Capital from the Ancient Harbour Castle, Kition, 131.

Section of Doorway of Pilaster Building, Tell el Hesi, restored by Professor Hinders Petrie, 165.

Diagram illustrating Viollet-Le-Duc's Theory of Origin of the Volute, 190.

Volute Capital, Jerusalem, 191.

THE ARCHITECTURAL LITERATURE OF FRANCE, 145.

The Hasty and Improvident Architect, 151.

The Architect-Sage, 155.

WOOD-CARVING AND WOOD-CARVINGS, 201.

Detail of Restored Portion of Oak Rood-screen, South Pool Church, South Devon, Fifteenth Century, 203.

ILLUSTRATIONS (*contd.*).

Portion of Oak Rood-screen, Portle-mouth Church, South Devon, Fifteenth Century, 203.  
Canopy to Dean's Hall, St. Paul's Cathedral, 206.  
Bishop's Stall, St. Paul's Cathedral, 207.

## SAINT-FRONT OF PÉRIGUEUX, AND THE DOMED CHURCHES OF PÉRIGORD AND LA CHARENTE, 233.

Plan of St. Mark's, Venice, 234.  
Plan of Saint-Front, 236; Interior, 238; Exterior, 239.  
Impost, Germigny-les-Prés, 241.  
Impost, Granson, 241.  
Arcade on West Front, and Zigzag Moulding, Old Church, Saint-Front, 242.  
Frieze over Porch of Old Church, 242.  
Fragment of Early Dome, and Plan of Tower, St. Stephen, Périgueux, 246.  
Capitals, Saint-Front, 247.  
Capital, Elne, 248.  
Capital, Saint-Michel-d'Entraigues, 248.  
Capital and Architrave, Saint-Michel-d'Entraigues, 249.  
Capital and Architrave, South-east Apse, Saint-Front, 250.  
Plan and Section of Pendentive, Saint-Front, prior to its Restoration, 252.  
Pendentive and Vault, Saint-Front, as restored 1856-71, 253.  
Plan and Section of Chamber in Tower, Brantôme, 255.  
Sketch of Vault, Brantôme, 256.  
Capital in Belfry, Brantôme, 256.  
Saint-Astier, 257.

ILLUSTRATIONS (*contd.*).

Elevation of Pendentive, St. Stephen's, Périgueux, 257.  
The La Charente Pendentives—Fléac, Lanville, Mouthiers, 259.  
Restored Plan of the "Vieille" "Église," Saint-Front, 261.

## NOTES ON SOME REMNANTS OF MEDIEVAL BURGUNDY, 273.

A Typical Burgundian Staircase, Tour Gaillon, Vézelay, 277.  
Transeptal Tower, Vézelay, 278.  
The Narthex, Vézelay, 278.  
Tower, Saint Germain, Auxerre, 279.  
Lady-Chapel, Saint-Etienne, Auxerre, 280.  
Crypt and Capitals, Saint-Germain, Auxerre, 508.

## SAINT-PIERRE-ÈS-LIENS: THE ANCIENT CATHEDRAL OF GENEVA, 301.

Choir Stalls, 301.  
New Buttresses, South Elevation, 309.  
Calvin's Chair, preserved in the Cathedral, 313.  
Pier 1, against Wall of North Aisle, 314.  
Pier 23, from Chapel east of North Transept, 315.  
Capital between Piers 26-34, from Arcading around Choir, 317.  
Portico of Saint-Pierre, built in 1750, 319.

## BRICKWORK TESTS, 333.

Pier No. 1, immediately after crushing, 334.  
Pier No. 2, after compression, 335.  
Pier No. 4, Gauge at 110, 335.  
Pier No. 4, after compression, 335.  
Pier No. 5, after compression, 335.

ILLUSTRATIONS (*contd.*).

Pier No. 8, commencing to give way under compression, 337.  
Pier No. 9, after compression, 337.  
Pier No. 11, Gauge at 98, 337.  
Pier No. 11, Gauge at 101, 337.  
Pier No. 11, Gauge at 103, 339.  
Pier No. 12, Gauge at 97, 339.  
Pier No. 12, after compression: front view, 339.  
Pier No. 12, after compression: back view, 339.  
Diagrams showing ways Piers failed, 346.  
Crusher Gauge, 350.  
Testing Machine, 353.

## BARODA PALACE, 421.

Marble Balustrade of the Main Staircase, 427.

Diagrams illustrating Mr. Chisholm's Remarks on Domical Construction, 447.

## HOLBORN-STRAND IMPROVEMENT, THE, 434.

The Art Committee's Plan, 435.

## THE TEMPLE OF DEIR-EL-BAHARI, 544.

Middle Platform: Colonnade, 546.  
Shrine of Anubis, 547.

## Westmorland Slate Beds, 195.

Tomb Tower, Palmyra, 290.

Japanese Stencils, 499.

Site of the Projected Theatre at Kieff, 551.

Newcastle-upon-Tyne, from the MS. of Froissart, 556.

Heber Tower, Newcastle-upon-Tyne, 556.

The Old Black Gate, Newcastle-upon-Tyne, 557.





## LIST OF CONTRIBUTORS, AUTHORS OF ADDRESSES, PAPERS, &amp;c.

AND OF THOSE WHO HAVE JOINED IN THE DISCUSSIONS AT GENERAL MEETINGS.

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# JOURNAL

OF

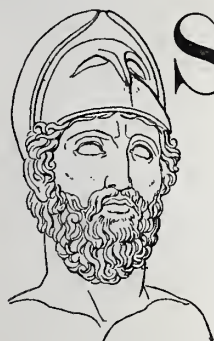
## THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

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SESSION 1895-96.

THE OPENING ADDRESS. Delivered by the President, FRANCIS C. PENROSE, F.R.S.,  
at the First General Meeting, Monday, 4th November 1895.

COLLEAGUES AND GENTLEMEN,—



SINCE the delivery of my first Address from this Chair, just a year ago, we have recorded the loss by death of no fewer than seventeen Fellows, all men who had made some mark in the profession, while a few were highly distinguished—personal friends of long standing to many here and to myself. Ewan Christian, a predecessor of mine in the Chair of the Institute, had been a member fifty-five years, ten of which he passed as Associate. My friend St. Aubyn, who spent the last years of his life at Marazion, in sight of the famous St. Michael's Mount with which his family name was connected, was elected an Associate three years earlier, in 1837; and Henry Clutton, whom we have known as the Clutton of Hartswood, became an Associate in 1838. These three men, who have now joined the majority, may be said to have been identified with the Institute during the whole course of its corporate existence; and, certainly, we could wish for no worthier representatives than they showed themselves during that relatively long period. There is one other name I would mention, that of Paley, whose residence at Lancaster prevented his many friends in London from meeting him as often as they desired. We have also lost two of our Examiners, Ernest Turner and Harry Drinkwater, both of whom devoted themselves to the work—by no means light or easy—which devolves upon those members of the Board who set the papers and conduct the Examinations qualifying for candidature as Associate.

We have also to deplore the decease of seven Associates, one of whom, Gordon M. Hills, elected in 1858, was an archæologist of repute; while to another, Herbert Gribble, is due that important work of architecture, the Oratory at Brompton. From among the Hon. Associates, Alfred White, who had been a member from the foundation of the class, and who will be remembered as having at an earlier period taken an active part in the work of the Society of Antiquaries, is gone.

Dr. Reichensperger, of Cologne, who had been thirty-one years a Corresponding Member, and Richard Morris Hunt, of New York, who was the first citizen of the United States to

receive the Royal Gold Medal, are both lost to us ; and to lose men of the kind is a far greater loss than many of us, in the hurry of life, are perhaps aware of, for, among our half-hundred of Correspondents, none were more friendly to this country and to British architects than they were. Reichensperger, from his place in the German Parliament, invariably held up to notice and praised our free English custom and methods in architecture and the arts : he was an enthusiastic Goth, if I may be permitted the expression, and was one of the Jury in the great international competition for Lille Cathedral, high place in which was awarded to Englishmen. Hunt's speech in acknowledgment of the Queen's gift, made in this room little more than two years ago, is still fresh in our memory ; and I may take this opportunity of stating that in the choice the Institute then made of Richard Morris Hunt as representative of the United States, we chose the very man whom his architect fellow-citizens would have chosen had they been asked, and whom they delighted to honour and see honoured.

I hope that the time spent over the mournful prologue with which I have been compelled to open my remarks will not be considered excessive, for I have much to say, which may be divided under two main heads : (1) the treatment of architects by the public, and (2) the relations and services of the Institute to the profession and the public. Before, however, proceeding with these principal points of my Address, I wish to be allowed to glance briefly at some of the events of the last twelve months which concern ourselves and our work.

With the current year there came into force a new Building Act for London, and a Tribunal of Appeal to which contested questions under the Act are submitted : and I venture to see in the establishment of the Tribunal the germ of powers very much higher and more extended than those yet accorded to the new Council of Three. One of my predecessors in this Chair, Mr. Waterhouse, said in 1889, just six years ago, that "A special Tribunal for the "consideration and settlement of building cases" was required ; and if we have not obtained quite all that he then wanted, we have at least the beginning of it. The current year also witnessed at its commencement an important development in our Examination system. From the 1st January 1895 every fresh applicant for admission to the class of Associates has to ascend three stages of progression before he can pass as qualified for candidature. He has first to be admitted a Probationer, then a Student, then a Candidate ; and this requires a minimum period of five years to accomplish. True, there are special facilities for architects in practice and chief assistants to enter for the single Final Examination, but, for all youths entering the profession, the three grades must be successfully attained before an applicant can submit himself for election as Associate. The current year has also witnessed a revival of the Architects' Registration Bill, which was read a first time in the House of Commons that has recently passed away. Its attempted passage through Parliament was opposed by the Royal Institute of British Architects, involving an expenditure of labour and of money which the Institute is ill prepared to meet, and we were ably assisted in our opposition by the Architectural Association and the Art-Workers' Guild : but none of the Royal Academies of Arts in the United Kingdom appear to have acted in defence of their architect-members menaced by the provisions of the Bill.

Early in January we were enabled, through the courtesy of the French Government and the kindness of the Institut de France—the attainment of whose centenary this year is an event of high importance, not only to Europe, but to the world at large, and one which evokes our heartiest congratulations—to exhibit a remarkable series of drawings of the Pantheon, the work of Monsieur Chedanne. *Grand Prix de Rome*. Later in the year it was our good fortune to welcome a large number of architects and engineers from Cologne and the Lower Rhine, who paid a week's visit to London. Both these events possess a value to us, as professional men, distinct from the purposes they may be said to serve, for they



initiate association and establish ties between the architects of different countries, few, if any, of whom should be better acquainted with each other or respect each other more than those of Germany, France, and England.

Some effort also has been made during the last few months to arrange a scheme for the utilisation of our loan collection of educational books by members resident at a distance from London and by the Allied Societies. A catalogue of this collection has been published in the *KALENDAR* issued to members last week, with the object partly of showing them how the collection is composed, and partly of inducing them to offer suggestions for its improvement, or even to contribute additional copies of works in constant demand by Probationers and Students. A Report on the subject will be submitted, I believe, in due course; and meanwhile I content myself with urging you to look carefully at the catalogue to which I refer, and to give the matter your serious consideration.

### ARCHITECTS AND THE PUBLIC.

#### RESTRICTED EMPLOYMENT OF THE ARCHITECT.

The more usual course on these occasions is for the President to address his brother architects, looking chiefly at their position with reference to their employers, the public—by this term meaning either private employers, public bodies, or associated committees. It may not, however, be disadvantageous for once in a way to look at the matter from a somewhat different point of view, and to consider what architects have a right to expect from the public, and especially in the case of public competitions, which are often very unsatisfactory, and to which I shall refer at some length further on.

There seems to be an impression abroad, and one which is very unfavourable to our profession, that the services of an architect are not required unless a building is to be of an ornamental character; and that, when an architect is called in, it must necessarily be more costly than in those cases where he can be dispensed with. We all know that that is a great mistake; but it would be mutually advantageous to the public and ourselves if it were realised that the well-ordered plan elaborated by a skilful architect must necessarily be economical in many ways, and if some initial expense has to be incurred by his insisting on sufficient solidity and good material, it is very soon recouped, and over and over again saved in the repair bill. If the employer asks for a building without ornament, the true architect will make no objection: he will know how to produce a good and comely, or even stately, building without it.

One of the greatest satisfactions that an architect can feel is when the ultimate cost of a building is kept very closely to the first estimates. When this has not happened it may very frequently be traced to a want of proper confidence shown to the architect at the outset. The employer supposes that it will promote economy if he names at first a smaller amount than he is prepared to spend. To this the architect adapts his design, and the work is commenced; but, as it proceeds the employer—or perhaps his wife—demands additional size, or other modifications, which can only be introduced at a greater cost than would have been the case if they could have been embodied in the original design. Something of this kind can also have arisen from the work having been commenced in too great a hurry by the urgency of the employer, owing to his ignorance of the time required for the due elaboration of the design. For, however long he may have been himself deliberating on the undertaking, almost as soon as the architect has been consulted the contract drawings are expected to be ready, and the work put in hand before the plans have been maturely discussed between the employer and the architect. Much time and much subsequent worry might frequently have been avoided by a few weeks', or even days', free intercommunication before the design was put into execution.

We are all of us, however, I feel sure, familiar with cases where due consideration has been shown by the employer to the architect; but I have no occasion to enlarge upon these.

#### BUILDING SURVEYORS UNDER LOCAL AUTHORITIES.

In communications between architects and the District Surveyors in London the latter are found almost invariably just and courteous; but I am informed that in many provincial centres the local Acts and By-laws (which had not during their formation the advantage which the London Building Act had, arising from the great pains which some of our members took in discussions with the London County Council, obtaining thereby important amendments) are administered under surveyors who have often had no architectural training whatever. Architects who may be practising in those places are frequently much harassed, and interfered with in an unwarrantable manner, even to the extent of the builder being ordered to alter parts of the work without any reference to the architect. According to the information I have received, public or municipal buildings seem to offer the most frequent occasions for the kind of interference complained of.

Our brethren of the Allied Societies may feel assured that if there are any points connected with this matter on which they think the Institute can aid them, the Council will be very glad to receive communications on the subject.

#### COMPETITIONS IN GENERAL.

The most unsatisfactory relationships between architects and their employers are apt to arise in the arrangements connected with architectural competitions. That the competing architects are not unfrequently themselves to blame for part of this has often, and not unjustly, been said both in this room and elsewhere; but much of it is caused by the promoters of competitions, who ought to consider more than they are apt to do what is due to the profession. This is, no doubt, often the result of ignorance on their part, and, if so, there is hope that it may be gradually improved. It is already a favourable sign that in very many recent competitions professional assessors have been appointed, but there has been in too many instances a want of proper consideration shown to the assessor's award.

On the subject of architectural competitions in general my immediate predecessor in this Chair contributed a Paper to the *JOURNAL OF PROCEEDINGS*\* in April 1891, the arguments of which appear to me very hard to meet, showing that the principle of these competitions is altogether wrong and beneficial neither to architects nor to the public. This statement, however, with respect to the former, perfectly true as it is, as I hope presently to show, may not be quite so convincing to all of us as to the public: because, whether rightly or wrongly, young aspiring architects probably do think that from competitions, whether they are successful or not, they get an opportunity of advertising their powers. But as regards the public, it appears to me that Mr. Macvicar Anderson's argument in the Paper referred to is solid all round, namely, that a competition is not the way to get the best architectural result. It can hardly ever happen that any set of conditions and instructions issued by a committee can supply competing architects with all the information required for forming a successful plan at all comparable to the free intercourse of an appointed architect with his employers at the outset. At any rate, whenever a competitor has obtained such full information it must have been by means not equally accessible to other competitors, and therefore unfair to them; and there is little probability of a design based on such data being the best which would have been possible if all had been as fully instructed. Let us, however, suppose there has been no unfair running, that the architect has been appointed who has gained the award, and that he is really the most

\* See THE R.I.B.A. JOURNAL, Vol. VII. N.S. (1891), p. 247.



skilful of the number. When he becomes more fully acquainted with the circumstances of the problem he will almost certainly find that material alterations from the competition design ought to be made, and probably will have to be made; in which case it can hardly be otherwise than that he will be much biassed by the first design, and he would have produced a much better building if he had been appointed without a previous competition.

It seems to me quite clear that an architect's best work cannot be brought out by competition as we generally understand the word. He must, so to speak, be serving two masters—one that which is best in the abstract, and the other that which is most likely to please the promoters, who often are very incompetent persons. It may be said by some that the spur of competition is useful in exciting genius; but a far healthier stimulant is the wish that a building which may have been entrusted to his hands shall redound to his credit. This is the true and only competition which ought to be encouraged.

#### COMPETITIONS AND COMPETITORS.

Then as to the bearing of the question with respect to our profession, my attention has been drawn by a friend to the case of a recent competition, that, namely, at West Ham.

"Here," he writes, "75 designs were sent in for a building to cost £40,000. One man would get properly remunerated, two others get small inadequate premiums, and the remaining 72 will have lost all the time and money spent. At the ordinary professional charge for sketches only, viz., 1 per cent., the amount would have been £400 for each of the designs, so that at this rate the cost of professional labour has been nearly three-fourths of the cost of erecting the building. Surely this must be a great loss to the profession as a whole, and the great majority of the competitors might have been better employed and more profitably. Business men have frequently expressed the utmost astonishment at this wasteful system."

Another point which ought to be considered as exercising a very unfavourable effect upon architects who engage in competitions is the severe mental strain to which even a successful competitor must be subjected in compressing his work into too short a space of time. There is nothing in other liberal professions at all analogous to our architectural competitions, and they certainly do not raise architects in public estimation, particularly in the way in which they are so often conducted now. The practice has become so general that I cannot flatter myself it can be arrested; but it may be improved. In his excellent address recently given at Manchester [p. 34], Mr. Holden, the President of our Allied Society, in referring to this very subject, points out the most effectual means, and concludes thus:—"The question is a very difficult one to deal with, especially so long as architects of position can be found ready and willing to enter into competitions on almost any terms. If leading architects would refuse to compete excepting on fair and proper conditions, there might be some chance of obtaining better conditions; but until this is done I really cannot see any way out of the difficulty."

Instead of resorting to competition, a far better plan would be for promoters to discuss among themselves and settle who the architect should be for any particular work. Committees of promoters who think they are securing for the subscribers whom they represent the best result by eliciting, as they seem to expect, happy inspirations from a number of different minds and choosing the best of them—which by no means follows as a matter of course—go a very wrong way to work. Again, if there be any occasions when competitions are more undesirable than others, it is in cases where adaptations are to be made to existing buildings.

I have thought it right thus to affirm my entire agreement with my predecessor in his views on the subject of competitions in general, in the hope that in some, however few, occasions it may be taken into consideration by promoters. Now I have to discuss some points

in connection with the system, already become so fashionable, which will be applicable both to open competitions and to those that may be restricted to a limited number, looking at the matter as much as possible from outside the profession. One observation I would first make to competitors, and that is to urge them to take the advice given from this Chair by Mr. Waterhouse in his Address to Students in January 1889, namely, that when unfair or obviously misleading conditions of competition are issued by a promoter, the duty owed to the profession is to make no response. In short, Answer him not.

#### COMPETITIONS AND THEIR PROMOTERS.

Unfair conditions are not always—indeed, I should rather say are not generally—the outcome of unfair or ungenerous feeling on the part of promoters; for their often objectionable clauses competing architects are much to be blamed. At various times architects have competed when they ought to have declined, and thus led promoters to think that they will get a sufficient response under almost any circumstances. An example of the kind, embodied in an invitation to architects, accompanied by a proposed set of conditions, from which I select the clauses that bear upon the subject before us, has come before me, which, however, seems to be but a specimen of a class; but it is a class which I think must yield to improvement if architects will but make a proper stand against anything of the kind by refusing to compete. It will be observed that in these the authority of the assessor is reduced to the lowest possible degree. This was a competition for designs for enlarging existing buildings, and the conditions were virtually as follows:—

- (1) The committee have appointed Mr. \_\_\_\_\_ to act as assessor to assist them in their selection.
- (2) Block plan of present buildings can be seen by appointment.
- (3) Drawings required:
  - (a) Block plan, with position of buildings, roofs, drainage, &c. in to the foot.
  - (b) Plans of each floor.
  - (c) Elevations and sections,  $\frac{1}{2}$  in. to the foot.
  - (d) Plan of suggested alterations, adapting same for connection and communication with proposed new buildings, and improvements of sanitary arrangements.
- (4) Each to be accompanied by a complete specification and description of means of heating, lighting, ventilating, and draining.
- (5) Any design will be excluded which in the opinion of the committee and the assessor does not conform to—
  - (a) If sent in after date mentioned.
  - (b) If it does not give the accommodation asked for.
  - (c) If the committee and assessor should determine that the probable cost of work carried out would exceed the limit laid down.
- (6) The committee will award a premium of \_\_\_\_\_, namely, a sum not quite amounting to 1*d.* in the pound, reckoned by the limit of expenditure named in the conditions, subject to rule (5), to the author of the plans considered the most suitable; and upon such premiums being paid the plans shall become the absolute property of the committee.
- (7) Should the committee employ the architect receiving the premium to carry out his designs (with or without modification), such premium to merge in his commission.
- (8) Accommodation required a long list of desiderata.
- (9) Committee reserve right to appoint quantity surveyor.
- (10) The limit of expenditure.
- (11) After award plans of unsuccessful competitors to be returned, carriage paid, but the committee will not be responsible for any loss or damage.

No lengthy comment is needed on the above. The committee under these conditions, by a majority of one, might, in consideration of the premium offered in clause 5, impound the plans and put them in the hands of a Clerk of Works to execute!

In commenting in *The Builder* of the 19th ult. on a recent competition, the Editor calls attention to the absurdity of a somewhat favourite condition issued by promoters—viz. that the designs are to be accompanied by a tender from a responsible builder. How could a *bona-fide* tender be given unless the quantities were taken out! And we all know what a long operation



that is—absolutely inconsistent with the circumstances of a competition. And then follows a condition which ought to have warned any reasonable-minded architect off the field—viz. that the committee reserve the right to retain and carry out, at their own pleasure, all or any parts of the premiated designs without any reference to the architect.

Surely in vain the net is spread in the sight of any bird, said the wisest of men—but he evidently had not reckoned for an architectural competition!

I am glad, however, to be able to bring before you another case, of which the preliminary proposals have lately been issued, and from which I extract some clauses forming an agreeable contrast with the last:—

(1) The President of the R.I.B.A. to nominate an assessor.

(2) The assessor shall draw up the conditions of the competition, and in giving his award shall state in writing his reasons for doing so. All the competition designs shall, with the consent of their authors, be publicly exhibited after the award has been given.

(3) The design awarded the first place by the assessor shall be the design adopted unless it should be found that a majority of not less than three-fourths of the entire committee are in favour of any other of the competing designs, which in the latter case shall be adopted.

We are all, I believe, convinced that no response ought to be made to an invitation issued for any competition unless there be a professional assessor appointed; and it is self-evident that such assessor ought to be a man of high standing, and free from any local interest. But, with this exception, rather different views appear to be held respecting the degree of authority with which he ought to be invested in regard to the appointment of the architect to carry out the works after he has given his award. There is one thing, however, of extreme importance, namely, that he should not be called in, as is too often the case, when a number of designs have been sent in in answer to the unassisted invitation of the promoters, but that he should himself take the leading part in the preparation of the conditions and instructions. When this is done promoters may be saved from making many mistakes. A very misleading error they often make is to give out a statement of their desiderata, and proceed to state a limit of cost, which are frequently quite incompatible with each other. Hence arises a source of very great perplexity both to the competitors and to an assessor appointed after the designs have been sent in, the latter finding it impossible to adjust the two irreconcilable views. There is, however, an objection of some weight, though not comparable with the absence of professional direction, in the drawing up of conditions, that if the assessor is known beforehand—and it is hardly possible that in his conferences on the spot with the committee of promoters he should remain *incognito*—the competitors will be more or less influenced in their designs by the study of his known or supposed architectural bias; and this is perhaps the reason why the assessor has so often been only called in at the last moment, when all the mischief introduced by careless and misleading rules has been done. It is, however, a difficulty which, when thought of sufficient consequence, could be avoided by various means obvious to those who have experience in such matters.

Returning to the question as to the amount of authority which ought to be given to an assessor, it certainly appears to me that he should not be merely allowed to recommend a certain course of action to the committee of promoters, but that his position should be made predominant. As, however, the promoters can hardly be expected entirely to give up their control of the decision, I gladly endorse, as the course which meets the view I had myself already formed upon it, the condition I have already quoted, that the assessor shall have the duty of nominating the architect, unless his selection shall be challenged by three-fourths of the whole committee; and I think that such a clause as this would satisfy our expectations, which several recent repudiations of the assessor's award have seriously disappointed. It has been suggested that the assessor's award should carry the appointment absolutely, unless

some valid reason be forthcoming to the contrary, and that such validity should be decided by appeal to the President of the Institute. But it appears to me that promoters would be more likely to agree to the former rule, which would in almost every case exclude local favouritism.

The course which appears to me to be the most desirable, and which I am glad to find coincides with the opinion of several highly experienced assessors, forms one of the Suggestions printed in our KALENDAR, namely—that the promoters should by advertisement invite architects “willing to compete for the intended work to send in their names by a given day; with “such other information as the candidate may think likely to advance his claim to be admitted “to the Competition. From these names the Promoters, with the advice of the Assessor or “Assessors, should select: (a) ” [and this I hold to be the better course] “an architect to carry “out the work; or (b) a limited number to compete, and each Competitor thus selected should “receive a specified sum for the preparation of his design. The author of the design awarded “the first place should be employed to carry out the work” and to this might be added a very desirable suggestion, that some proper remuneration should be given to the architect selected if the work should not be carried out under his superintendence within some reasonable time.

### THE INSTITUTE, THE PROFESSION, AND THE PUBLIC.

#### THE DEVELOPMENT OF ARCHITECTURAL EDUCATION.

In the extremely able Address that my friend Mr. T. G. Jackson, A.R.A. (a name to which I greatly regret I cannot add the letters F.R.I.B.A.), gave at the opening of the Liverpool School of Architecture, and which has been printed in the JOURNAL Vol. II. p. 636, he says that “through- “out the land technical schools and institutes are rising.” Nothing, indeed, can serve to encourage those who have laboured in the cause of education for architects and handicraftsmen more than the foundation of the Liverpool School, under the combined auspices of that city and of Victoria University; and I see no reason why, after efforts similar to those which have resulted in success at Liverpool, other important cities in the United Kingdom, such as Edinburgh, Dublin, Manchester, Bristol, Oxford, and Cambridge, should not found or develop a like School, and a like Professorial Chair of Architecture. I do not mention Glasgow because a Chair of Architecture is already in existence there. The Institute may well be proud of the remark made by Mr. Jackson above referred to, for the initiation of this gratifying development of architectural education, which is to be witnessed throughout the United Kingdom, is mainly due to us.

Let us go back together for a few years, even less than twenty years, and ask ourselves whether we are any the worse now for the change, if any, which has come over our art from this still-vexed matter of education; or, indeed, whether any change whatever has taken place which may be deemed detrimental to our art. What security had we, in the year 1875, that the young men whom we elected Associates of our body had received any, even the most superficial, education, scholastic or technical; or that they were fitted, by nature and position, to exercise the functions of an architect? How was an outsider then to know, except by personal trial, whether any Associate R.I.B.A., whose reputation was not established, had or had not received any education in the art, science, business of architecture? All that we required in those days from a candidate for the Associateship was his nomination by three Fellows who knew him, and his ability to pay an entrance fee and an annual subscription, with his acceptance of honourable obligations such as are now in vogue. Twenty years ago we were pointedly asked in this room by a visitor. What evidence was there that any man setting up as an architect had the smallest scientific knowledge, or even a knowledge



of mechanics, or of the qualities of different materials, or in short of anything at all except the power of making a sketch which might satisfy ignorant employers, and plans and elevations from which builders would never hesitate to contract? The question was left unanswered at the time, and a year or so afterward, when we rearranged our By-laws, one was added to the effect that, after May 1882, no one should be admitted to the Class of Associates until he had undergone the test of a professional Examination. At that time the Council were strengthened by the inclusion of most of the Past Presidents and Past Vice-Presidents, who gave not only advice but a great deal of assistance in the work of reorganisation; and I should be unjust to the memory of an able colleague, who occupied this Chair with advantage to the Institute, were I to omit mention of the late Mr. Whichcord, whose energy and business capacities largely contributed to its success. Nor can I forget that the late George Edmund Street presided over the then newly constituted Board of Examiners, and took an active part in the work which preceded the first obligatory Examination held in March 1882. The results of the subsequent thirteen years are visible in the establishment and development of schools, of studios, of classes of architecture and the subsidiary sciences and arts.

One of our earliest efforts to reach the public was to publish, in 1870, a List of Books recommended to professional students; and a revised list, slightly modified in form, was published in the JOURNAL OF PROCEEDINGS of 1882-83. This afterwards appeared in the first issue of the KALENDAR in 1885, and a revised form of it has been regularly included therein. About the same period communications were addressed on this subject to the chief provincial centres, and we were soon gratified to learn that some of the free public libraries, notably those of Liverpool and Manchester, had acquired the books thus recommended, and that students in those centres preparing for our Examination could find there, ready to hand, some at least of the means of education. In 1887 one of my predecessors in this Chair, the late Mr. I'Anson, addressed a letter to each Fellow and Associate, calling attention to the views he had expressed in his Presidential Address of that year on the subject of education generally, and stating that the future prosperity and influence of the Institute, and its position as a representative body, must depend on the continued and increasing accession of the younger members to the class of Associates. He therefore urged that the direct personal influence of the elder members was necessary to guide the studies of their pupils, and assist them towards successfully undergoing the test of examination. The personal response given to that appeal at the time was most gratifying, and the results are even more so; for in October 1887 the Associates numbered 681, of whom 122 had passed an examination prior to election, while at the present moment, in November 1895—only eight years later—they number 924, of whom 577 have entered after examination. There are, moreover, on our registers 142 Students and 708 Probationers, most of whom, in due course and in regular progression, will seek admission to the class of Associates.

Not the least potent factor in the spread and development of education has been the alliance of non-Metropolitan Societies with the Institute. The main objects of this federation, which were stated at a meeting of the General Conference of Architects held in this room in May 1887, were educational: they were embodied in By-laws made under the provisions of the New Charter of 1887 and approved by the Privy Council in February 1889. Nine Societies were almost immediately taken into alliance, and at the present time they number fifteen at home and one in Australia. In 1893 a Conference of these Allied Societies, then thirteen in number, was held at the University in Liverpool for the purpose of discussing a proposal to divide the United Kingdom into districts, of which the local Societies then or hereafter allied to the Institute would be the respective centres. Among the results of the Conference which approved the proposal was a collective opinion, stated in the form of a resolution, that the establishment of

such districts, each with its local allied centre, would enable arrangements to be made for extending throughout the country the advantages of our Examinations, and promote a systematic organisation for educational purposes by utilising and developing the means of instruction available at or connected with such centres; and it seems to me that the opinion then formed was far-seeing and correct.

Gentlemen, let me beg you to look into our KALENDAR for the Sessional year of 1892-93, in which the local "educational facilities" at each allied centre were given for the first time, and compare them with similar particulars in the KALENDAR which has just reached your hands. This will assure you of the success that has attended the federation of the chief architectural bodies in the United Kingdom, as well as of the favourable influence that the establishment of an obligatory test, in 1882, has had on the education of architectural aspirants. Only three years ago, in our thirteen Allied Societies that of Manchester alone possessed a lecturer in architecture, namely, Mr. Stelfox, the Ashpitel Prizeman of 1888, who conducted classes held by the Society on Monday evenings. That of Liverpool had a sketching club and also Classes of Design and Construction, with a special course of instruction which from the subjects it included may be said to have been based on the programme of our Examinations; and each subject was entrusted to a member of the Society who acted as lecturer and visitor. That of Birmingham had a Class of Construction held at Mr. Lloyd's office, and a Class of Design held at Mr. Hale's office, at both of which members of the Birmingham Association attended as visitors. That of Sheffield had classes for the study of specific subjects. The Societies at Leicester, Glasgow, Newcastle, Bristol, Nottingham, Dublin, Leeds, Exeter, Dundee, in 1893, had no educational courses of instruction: and, except in Glasgow, which possessed Mr. Gourlay, and in Leeds, which possessed Mr. Howdill, there were no outside instructors in the various technical schools situated in those towns, nor had those institutions courses of instruction to which young men hoping to become architects could apply themselves with confidence.

But the progress which two years alone have wrought is remarkable. In our KALENDAR recently issued it will be seen that every allied centre now possesses local educational facilities of some kind, more or less complete, for architectural pupils. At Sheffield the Allied Society is connected with the School of Art, and at the technical school in that centre a course of instruction,\* both elementary and advanced, is given. In Leicester the School of Art affords similar instruction, but as yet it has no professional instructor. In Manchester excellent opportunities are offered at the Municipal Technical School for instruction intended expressly for architects' pupils, improvers, and assistants preparing for our Intermediate and Final Examinations; and at the Municipal School of Art in that city the teaching staff includes Mr. Walter Crane;† while in the Manchester district, at Accrington, Bury, Blackburn, and Todmorden, there are classes of a similar character. In Glasgow the School of Art, with which the Glasgow Institute is closely identified, has courses of study arranged to include the subjects required for our Intermediate and Final Examinations, with lectures on "Domestic Architecture," and "Design."‡ At the same allied centre the Glasgow and West of Scotland Technical College has organised some most complete courses of instruction under the direction of Professor Gourlay, and established a studio in which instruction is given by Mr. Lochhead, all of which have been fully described in our JOURNAL. In Newcastle-upon-Tyne three different institutions provide more or less instruction for architects' pupils. In Bristol the University College has a special educational course, adapted to architectural students. At Liverpool the School of Architecture and Applied Arts, already referred to, and of which

\* Mr. Wigfull [A.], Institute Medallist for 1894.

† Mr. Glazier [A.] is associated with Mr. Crane in this work.

‡ By Mr. Alexander N. Paterson [A.] and Mr. W. J. Anderson [A.]. Both Associates.



a full description is given in our JOURNAL, bids fair to make its scheme of instruction valuable and successful. At Birmingham a four years' course\* has been instituted; and at Leeds† instruction is given both at the School of Art and the School of Science and Technology. At Dundee there are two educational centres for young men preparing for our Examinations. In Dublin lectures are given, adapted to architects' pupils, at the Metropolitan School of Art,‡ at the Royal College of Science, and the Technical School; and at Nottingham, Exeter, York, and Cardiff there are local educational facilities in a more or less advanced stage of organisation. In the greater number of the above cases the lecturers are members of the Royal Institute of British Architects.

In fine, there are now Chairs of Architecture in Glasgow and Liverpool; and there are schools in which the elements of architecture are taught, formed or forming in most, if not all, of the districts into which we have divided the United Kingdom. Less than ten years ago hardly anything of the kind existed outside the metropolis; and I who have taken only a very subordinate part in the work which has led to such satisfactory results venture to offer to those gentlemen who have mainly contributed to it my hearty congratulations.

The consistent course of study which for several years is looked for from those who undertake to acquire the very responsible business habits and the literary and artistic knowledge involved in the practice of architecture can hardly fail to have the effect of giving assurance to employers that in selecting an architect who has passed the ordeal they cannot be dealing with a charlatan. When regarded from the point of view of an aspirant or his parents, it is not denied that the required curriculum is intended to deter those whose abilities, or capacity for hard work which has been well defined as genius, do not lie in the direction of architecture; but, to those who are not so disqualified, it may prove a sufficient encouragement that many others, to whom they have no need to consider themselves inferior, have succeeded in passing the Examinations.

Connected with this subject, there arises one point worthy of our consideration, and to which I feel I ought to refer—namely, the fact that the Examinations are conducted by volunteers from amongst our members. It will not be thought surprising that this makes a considerable difficulty in keeping up the rota of Examiners able and willing to undertake the work. Greatly indeed is the Institute indebted to those who have hitherto volunteered and still continue to do so; but it would facilitate the progress of the Examinations very considerably if reasonable fees could be found for the Examiners. The obstacle to this course lies mainly in the emptiness of the Institute's treasury, on which subject we lately had some important remarks from our Auditors at the June Business Meeting. This emptiness of the treasury is engaging much attention from the Council, and will not be lost sight of during its coming deliberations. I certainly feel that, should a sufficient improvement be the result, a moderate honorarium to the Examiners would form a fitting application of part of it.

#### THE METRICAL SYSTEM OF MEASUREMENT.

There is a matter very seriously affecting us whose daily duties lie with *pondere, numero, et mensura*, to which I think it may not be out of place for me to refer here. Not long since the Parliamentary Committee appointed to consider the national standards, &c., reported in favour of our adoption of the metric system. The change would no doubt introduce certain far from unmixed advantages, but it would be attended with enormous trouble not to be got over for many years. I venture to take this opportunity of bringing before this body—than which no other in the kingdom could be so well or practically able to appreciate

\* Mr. Bidlake [A.], Institute Medallist 1885, is the principal lecturer.

† Mr. Howdill [A.] continues his course of instruction.  
‡ By Mr. Cecil Orr [A.].

it, and to which it would come home so intimately—an alternative which I cannot but think to be worthy of your consideration, in the hope that, if it should be well received here, some course founded upon similar ideas might make its way with the public. Instead of swallowing the metric system as a whole, what I here venture to recommend would, unless I greatly deceive myself, give to our commercial classes all that they could properly ask for, and to ourselves and the millions of the industrial classes all the advantages which could arise from the metric system, with less than one-tenth of the disturbance. The scheme involves a very insignificant change in our own reckonings of length, weight, and capacity to render the English standards easily commensurable with the French. I shall confine myself in what I say this evening to the measurements of length, as it is in these, it seems to me, that the change to the metric system is most to be deprecated; and suggest an alternative course by which we could obtain all the advantages of decimal notation without having to be saddled with the unwieldy metre—a standard that has to be used fractionally in 999 cases out of the thousand which occur in daily use.

If our inch were reduced in length by about one hair's breadth, ten such inches would be twenty-five centimetres, a measure which is current in Italy, the palm having been altered so as to agree with the quarter of the metre. I would therefore recommend the word *palm* to be used to denote a length of ten such inches, thus serving for general use instead of the foot, and giving us at the same time a decimal notation, whilst all small dimensions could be reckoned, as now, in inches, halves, quarters, and eighths, or decimals of the inch at pleasure. In our dealings with those nations that have adopted the metre, it would be only necessary to multiply or divide by 4, as the case might be; that is, divide a measurement given in metres and centimetres by 4, to bring it to English palms and inches, or multiply English palms and inches by 4, to bring them to the metrical scale. The slight alteration in the inch would not be felt in the dealing of our poorer classes, who are really the persons, both numerically and morally, to be most considered, and the complication introduced in commercial transactions would be very slight. Scientific calculators could readily take care of themselves. Weights and measures of capacity could be dealt with in an analogous manner by an almost insensible alteration of the ounce or the pound, the pint or the gallon, though the necessity in these, perhaps, would not be so great, because the kilogramme and litre are more reasonable standards than the metre. The above is the broad outline of the scheme which I venture to bring before you, and it is not fitting that I should carry it any farther this evening. I can hardly think that the proposal has not been made by any other person, but I have not taken it from anybody else. I am not advocating change, though I confess to leaning towards decimal subdivision, and to a desire for greater uniformity and simplicity, especially in our measures of capacity; but if a change is to come, I trust it will not be by the metric system adopted *en bloc*.

#### THE CLASS OF FELLOWS: AN APPEAL AND A SUGGESTION.

I began my perhaps too lengthy Address by a reference to the sad losses we had sustained in the ranks of members, and I propose now to conclude with some comments on the accessions made during the past twelve months, amounting to 5 Fellows, 67 Associates, 3 Hon. Associates, and 8 Hon. Corresponding Members. But, as a matter of fact, the Class of Fellows has lost, not gained, strength. The Fellows, who last November numbered 617, at the present hour number 594, being a diminution of 23. The Associates, who a year ago were 872 in number, have, on the contrary, advanced to 924, being an increase of 52; and in the course of the year only four out of the 872 have become Fellows. One gentleman who applied, and who had never been an Associate, was elected a Fellow at the final Business Meeting of the past session. I have also ascertained that during the last two years (1893–94



and 1894-95) only four outsiders, if I may be allowed so to designate men outside our ranks, and not previously Associates, have been admitted to the Class of Fellows, though during the two previous years 56 outsiders were admitted. During the two years before, 50 were admitted, and during the antecedent two years (1887-88 and 1888-89) 69 were admitted, to the Class of Fellows. These outsiders, as I venture to term them, were architects in the provinces, at foreign stations, in Australia and the Colonies, with a few Londoners—men who had had little, if any, opportunity when young of becoming Associates. If you will glance through the published lists you will find that they constitute an addition of strength to the Institute, and in many instances have added lustre to the roll of Fellows. Again, after a further dive into statistics, it will be found that of the 34 Fellows who sit on the present Council fourteen were outsiders; and yet were I to read out the names of the fourteen we should certainly agree that the Institute would have acted most unwisely and lost a great deal had it refused to admit them as Fellows simply because they had not previously been members in the Class of Associates. On this point, which I know full well is a delicate one, much misapprehension seems to exist both within and outside the Institute. In the first place, there is an abnormal amount of hesitation on the part of Associates long in practice to proceed to the higher grade, though we all look for such a sign of movement in its ranks; and we think that justice is not done to the high position the Royal Institute of British Architects is gradually acquiring if little or no progress be made in such direction. In the second place, too many practising architects of repute, and even a few of well-earned distinction, form no part of the Institute, forgetful, as too many of them are, that their influence and usefulness would be infinitely greater were they members of the corporate body, prepared to discuss important matters without bias, and to sink details of difference in a spirit of compromise, without which no Corporation, Community, State, nor Government of any description has ever been successfully carried on.

Colleagues and Gentlemen, I am about to make a suggestion which I hope may be received with favour, or at least with goodwill equal to that with which I venture to formulate it. This is the last occasion I shall ever deliver a Presidential Address from this Chair. Though I am not the senior Fellow, yet I applied for admission to the Institute as an Associate in 1845, and this coming January I shall have been fifty years a member. On the strength of long acquaintance with those present here to-night, and with many others who, alas! are lost to us, I venture to make an appeal to the good feeling, the good sense of British architects everywhere, whether members of the Institute or not—whether they call themselves artists or professional men—to join hands and show a united front to all and any who would do them wrong, either from an artistic or a business point of view. Let us, on our part, convince the outside men—men of distinction, men of repute, who are not members of this body—how gladly we shall see the barriers removed which prevent them from joining us; and how willing we are to do whatever is reasonable to remove them. It is not for us to say that possibly some of the barriers alluded to may not be, to some extent at least, of our own raising; and it would be a very fit subject for our Council to discuss whether greater facilities could not be made for the admission of Fellows from among those whose career shows that they would be worthy members of our body, looking at architecture as a career in which the two essentials of art and business have to be represented, though not always in equal degrees of combination.

It has more than once occurred to me during my tenure of office that one of the main reasons for the recent startling paucity of applicants for the Fellowship is the possibility that architects of mature age, men who have carried on extensive practice for the greater part of their lives—men whom we wish to see Fellows of the Institute, but who are not and never have been Associates—hesitate to take their chance of election

at the hands of a body of electors some of whom have only within recent years emerged from the position of pupils. It seems to me, for instance, somewhat sanguine to expect that men who are well-known members of the Royal Academy, of the Society of Antiquaries, and of other institutions in which for a long period they have been recognised as architects of repute and distinction, will consent to run the risks of an election dependent on the good-will or ill-will, or the prejudices, of some thirteen or fourteen hundred gentlemen, the vast majority of whom are their juniors, and some of whom are not even in practice. I, therefore, though with great diffidence, and with all respect for the more youthful of my colleagues, urge the Institute to consider whether the power of admitting to the Class of Fellows such men as those to whom I refer may not be confided solely to the controlling or governing body of the Institute, at least for the space of a year, or perhaps two years. The regulations which guide the Council in the admission of applicants for candidature as Fellows are sufficiently definite to constitute a check on any improper attempt to make such admissions too general or indiscriminate. The change may be effected by the suspension of certain By-laws; and, though such suspension requires the sanction of the Privy Council, I feel convinced that their Lordships, when the facts are properly explained, will acquiesce in the petition which it would be our duty to address to them. What I propose has good precedents to support it. For instance, in my own club—the Athenæum—the Committee have power to elect from time to time distinguished persons without submitting them to the chances of a Ballot of the whole body of members: and this is held to be a great honour by the persons themselves, while it is certainly of high advantage to the club. The way being thus opened, I venture to think that the Council would have little difficulty in reaching the majority of those whom we consider should be part of the corporate body, and in effecting, to a great extent, the fusion with ourselves of many, especially in the provinces, who resent the position in which they are placed from no fault of their own, but who are, nevertheless, forced to remain outside the ranks of the Institute, to our mutual regret and, perhaps, to the latent annoyance of both.

I trust that this suggestion, for which I hold myself solely responsible, may be deemed worthy of consideration by the Institute in general meeting, and that the result, if arrived at, may prove as beneficial to all the parties concerned as I confidently expect.

#### VOTE OF THANKS TO THE PRESIDENT.

MR. ASTON WEBB, F.S.A., *Vice President*.  
Sir, at very short notice the honour has been placed upon me of moving a Vote of Thanks to you for the Address that you have been so good as to deliver to us to-night, an Address that, I am sure, we all feel has many practical suggestions which will be to the great good of this Institute if they are adopted, as I hope they may be. I feel that it is almost an impertinence on my part, with those present to-night, to undertake this duty; for while they could do it easily and well, I shall do it imperfectly and with difficulty; but I hope, Sir, that my imperfections will not, at any rate, interfere with your feeling that this Vote is proposed to you in the most hearty way possible. In any remarks on the Address that you have given us, Sir, it would be impossible to pass over without a few words the notice that you made of the late Ewan Christian. He was so noble, so fearless and so true, that every one who had the

advantage of even half an hour's conversation with him must have felt the better for it; and I am sure we all feel, as you do, the great loss that we have personally, and as an Institute, sustained in the death of Ewan Christian. You noticed, Sir, in passing, the improvements to the Library. It is the hope of the Council that they will be appreciated by the members, and that the Library may be more generally used. It is the wish of all those engaged in the Library—the Librarian and others—to give every possible facility to all the younger, as well as the elder, members, with easy access to all books; and we hope that now that this room and the Reference Library have been made more comfortable, the Library will be more used than it has been in the past. The principal portion of the commencement of your Address, Sir, was taken up with the subject of competitions. That is a subject to which I am not altogether a stranger, and if I do not quite take the same



view as you do, perhaps, at any rate, I may be allowed to mention one or two points which appear to me to be difficulties. As you pointed out, it is extremely difficult for the competitors without consultation with the promoters to ascertain their requirements; but most of these competitions are instituted by committees who do not know their own requirements; and I think that those who have had most to do with committees will generally find this to be so, and that it is really for the architect in those cases (I am only speaking of competitions on a large scale, because I think that competitions for little buildings are a mistake) to suggest how the objects of the promoters are to be met in the arrangement of the buildings. As regards material alterations in the design after it has been chosen, with all deference, Sir, I have not found generally that the competition design which has been selected by an able assessor does require any very large alteration in the carrying of it out. Possibly, you may have referred to the drawings; of course these have to be redrawn; but my experience is that the general lines of the design do not usually require to be much varied. As to the cost, Sir, of a competition design, you mentioned a competition for a comparatively small building at West Ham (I think it was), where the cost of each design is estimated at £400. In conjunction with my friend Mr. Ingress Bell, with whom I have had the pleasure of going into most competitions, I have never yet spent anything like that, I am glad to say, on any one design; and I think it would be a very bad day, as you say, for our profession if money had to be spent in preparing competition designs to that extent. I think it is now the aim of assessors who prepare these conditions, and should be their aim, to lessen the expensive work which has to be done in preparing a design for competition. With regard to the conditions, we all feel that very often conditions are sent out which are hard and improper on the competitors, and no doubt, as you say, in that case architects should take no part in the competition. But, on the other hand, I venture to think that that does not absolve the promoters of the competition from acting fairly, even if competitors do to some extent place themselves in their power by competing on those conditions. In a recent case at Durham the conditions clearly stated that the promoters did not undertake to employ the successful architect; but I think, Sir, that that hardly absolves the promoters from their moral obligation to carry out the successful design without showing some very good reason for a departure from that course; and, as you are aware, the Council have written to the County Council of Durham in that spirit. And, Sir, with regard to the selection of the architect by committees, or by promoters, I am not quite sure whether a committee would select

the best architect, any more than they do the best design. They are often ignorant both of architects and of designs; and, therefore, I am not sure, Sir, that one way would turn out better than the other. As to the powers of the assessors to advise, I think that the Institute has always felt that it is very difficult to ask any body of men to actually bind themselves by any award of a professional man. If you go to a doctor and ask his advice, and he recommends some very stringent measure—cutting your leg off, for example—you do not at all undertake to follow his advice, although, of course, it will have great weight with you; and if you go to a lawyer in the same way, he may advise you to go to law, and probably will; but still you hold yourself free to do so or not; and the competitions committee have always rather held that if the promoters undertake to be advised by a professional assessor, that was almost as much as we could expect them to do. The next point, I think, that you referred to, Sir, was the largely increased facilities for education which are now to be seen throughout England, and you congratulated, as I think, if I may say so, very properly, the Institute on the part it has taken in causing that increase to be made. It has, of course, been laid to the door of the Institute that it has not done as much as it should do in the teaching of architects; but I think that by the course it has taken it has certainly given a stimulus to architectural education all over the country by raising some standard and giving some object to young men as to what they must learn. This action of the Institute was largely brought about by the action of the young men themselves. It was for years that they were asking that something of the sort should be done; it was for years that they showed a very great and real need for some direction in their studies; and it was with the object of meeting that need that the Institute has taken the action which it has, and indicated to the young men by these examinations the sort of knowledge which it thinks they should acquire. If it is thought this course of study can be improved upon we should be glad of any suggestions. One of our Honorary Associates, Mr. Alma Tadema, recently gave a most admirable lecture, which was reproduced in our JOURNAL,\* on the great importance for all men “to know”; and unless, Sir, we architects learn to know, and learn when we are young, however great an artist a young man may be, he will be working at a disadvantage; and it is the object, I am sure, of all those in the Institute who are working to this aim to encourage young men to know when they are young, so that, as they grow older, they may not have to spend their time in acquiring elementary know-



ledge which they should gain in their youth. And I hope, Sir, from the accounts which we get from the young men themselves, and from the numbers that now come, that that aim is being attained; and that young men are being put into the way of gaining this knowledge at the time when they are best able to assimilate it. With regard to the paucity of new Fellows, Sir, of course we all regret it, and any suggestion by which that paucity can be reduced will be most grateful. On the other hand the Associates are largely increasing, which means that the young blood, and new blood, is coming in in large quantities into the Institute; and in time that must tell, and make us a more vigorous body than perhaps we have been in the past. With regard to your suggestion, Sir, of admitting Fellows through the Council, I cannot but think that everybody would entirely agree to it and be much indebted to you for suggesting such a course. I think it is a most admirable one: it would enable us to honour those whom we all wish to honour, and to bring them in in a way which would both honour those who give and those who take. Neither can I suppose that many would not be willing to help us and come in on those conditions. The Institute has now been for more than sixty years endeavouring to do what it can. In the early times Charles Barry and Cockerell were actively engaged in it; in times since then we have had Scott, and Street, and Burges, and men of that stamp; we cannot think that they would have spent their time if this work were not worth doing. At the present time we have many of the most distinguished of our architects helping us; and we cannot think that they would spend the time they have upon the work if they did not think it were worth doing. But, Sir, the work cannot be thoroughly done unless we have the assistance of nearly every one, and I think we have the right to claim and ask all to come and help us who do not at present do so. We are quite aware that we have not much to offer them—we do not suppose that we have—excepting this, Sir, that we can offer them the opportunity of helping those who are less fortunate and less gifted than themselves. We hope that they will help us; so that, as a strong Institute, and as a united Institute, we may do a very great deal more than we can at present. The reason that I have heard urged why they do not join us is that we work in the interest of architects, rather than in the interest of architecture. But how is it possible for the Institute better to work in the interests of architecture? If we can influence architects by the help of those present here to-night and others—if we can inspire our young men with some enthusiasm and some greater love for their art—I think we shall do a very great deal for architecture. And it is for that reason,

I think, that we are much indebted to you, Sir, for the suggestion you have made.

MR. W. D. CARÖE [F., M.A., F.S.A., President of the Architectural Association.—I feel I am somewhat usurping the function of one of our Honorary Associates, but I hold it, Sir, as a great privilege to have been asked to second the Vote of Thanks for the Address you have just delivered to us, the second in which you have brought all the weight, the great weight of your knowledge, experience, and judgment to bear upon the treatment of subjects of so much importance and interest to all of us. I do not think, Sir, that I need touch upon topics which you yourself have treated so fully and so elaborately; and especially in the matters of Architectural Education and Competitions I have myself only so very recently and so fully put forward my own profession of faith that further words from me on those subjects would be rather superfluous. And, Sir, we are in no mood to-night either for criticism or discussion. We have the greatest respect for any views expressed by you, and we are most grateful to you for your Address. We are conscious always of the long life of devotion which you have given to the great cause of architectural scholarship, and, I may say, of scholarly architecture; and for that devotion, Sir, we, and I may say the world, are enduringly but contentedly in your debt. If I may single out any one of the comments which you have made, it would be that in which you told us so pointedly that the true architect the more readily may be dispense with mere ornament, and produce for us buildings even the stacher and comelier for their very simplicity. I was very much interested indeed, Sir, in your references and practical suggestions as to the partial adoption of the metric systems of the Continent in this country. I have it in my heart to wish that some such happy thought had occurred to cause a revolution in our un-speakable weights and measures many years ago when I was an unhappy small boy labouring to master the strange and capricious statements set before me in my arithmetic book. And even now, Sir, every time it is the lot of my still unhappy self to grind out metres into feet, and to search for that missing element of homogeneity between centimetres and inches, I am inclined to forswear even patriotism, and to wish I had been born under a decimal constellation—anywhere, anything but “a happy English child!” But, Sir, there is some consolation for us even now, and for those who have often to work in the metric system one may mention it. Mechanical science has to some extent come to our aid, and it is a fact worth noting that the usual foreign scale which is adopted for drawings, namely, the 100th scale, is very nearly allied to our 8th scale, which is actually a 96th; and homogeneity is to be found beyond that slight difference in the points of a proportional instru-

ment. In regard to what you have said about Fellows, Sir, and the admission of Fellows by the Council, I followed you with a great deal of interest and pleasure. I do not know who has the privilege of being the youngest Fellow among us; but, Sir, I feel that, if things go on as they have been going on lately—although, perhaps, the collective heart of the Council beats with one throb when there were five nominations to-night—still I feel, if things go on as they are, a time will come when that youngest Fellow, if he has his

fair measure of life, will remain as the sole and only occupant of that chair in his declining years; because he will be the only one left whom our constitution allows to assume the purple. And, Sir, I cannot but hope most heartily that the general body will acquiesce in your admirable suggestion; and, if they have not confidence in the present Council to permit it to adopt the responsibility and assume the function you have suggested, the opportunity is not very far away when they can elect a Council whom they can trust to do that work.



9, CONDUIT STREET, LONDON, W., 7 November 1895.

## CHRONICLE.

### The Opening Meeting of the Session.

Mr. Penrose's Presidential Address, the delivery of which occupied nearly an hour, was listened to throughout with marked attention, his apologetic avowal that he had almost attained his fiftieth year of membership, and therefore ventured, on the strength of old acquaintance, to make an important suggestion, having been received with a loud and long acclamation of applause. The Meeting was not a large one, but it was graced by the presence of several ladies, among whom were Mrs. Macvicar Anderson, Lady Blomfield, Mrs. Carøe, Miss Penrose, and Mrs. Statham. Letters were received from Professor Aitchison, A.R.A., Mr. Campbell Douglas, Mr. A. E. Street, M.A., from the Presidents of the Leicestershire, Liverpool, Manchester, and Sheffield Allied Societies, expressing their regret at being unable to be present, and from the Hon. Secretary, Mr. Emerson, who was detained in the country by the serious illness of a near relative. Monsieur Lucas, of Paris, also wrote, in words of praise, of the volume of the JOURNAL just completed, and of the educational labours of the Architectural Association—"cette Société sans égale au monde"—adding that, at the moment of commencing another Session of the Institute, he addressed his "respectueux hommage" to its honoured President.

### The Autumn Examinations: Preliminary and Intermediate.

A Preliminary Examination of architects' pupils and others for registration as Probationers R.I.B.A.

will be held in London, Liverpool, and Newcastle on the 12th and 13th inst., and on the same days the Written and Graphic portions of the Intermediate Examination of Probationers desirous of qualifying as Students will be held in London. To the Preliminary, 124 applicants, 17 of whom were relegated to their studies on previous occasions, have been admitted. Of these, 56 have been exempted, and 68 are to be examined, though two of the latter may possibly yet be exempted. For admission to the Intermediate, applications were received from 51 Probationers, 42 of whom, including 16 relegated to their studies on former occasions, have been admitted. The remaining nine, whose Testimonies of Study failed to satisfy the Examiners, have been advised to make another application next year; and meanwhile the Board will point out to them the deficiencies visible in their Testimonies, some at least of which must be executed afresh. The London Examinations will be held at the Examination Hall, Victoria Embankment, on the 12th and 13th inst., and the Oral Examination of the Intermediate will take place on the 14th inst. at the Institute. The Liverpool Examinations will be conducted under the charge of the Allied Society at the Law Society's Rooms, Union Court, Castle Street; and those in Newcastle, under that of the Northern Architectural Association, in a room at the Art Gallery, Grainger Street.

### Mr. Carøe's Presidential Address to the Architectural Association.

The November issue of *A.A. Notes* contains the full text of the Address delivered by Mr. W. D. Carøe, at the opening meeting of the current Session of the Architectural Association on the 11th ult., in the rooms of the Institute; and those members who have not yet read its fresh and genial paragraphs may do worse than devote a little time to perusing the whole. Meanwhile, some extracts which touch on the relations of the junior to the senior body of British architects generally, and on the Examinations of the latter in particular, are here given:—

My first word is of architectural education. We represent the foremost educational body in matters architectural which has existed in the country, and this year has seen new needs and new developments in our systems



which call inevitably for explanation and remark. We exist primarily and expressly as an educational force, and have so existed for nearly fifty years, and our history groups itself entirely around this object, and shows this as our original and ultimate end. . . . Since these, our beginnings, we have had some necessary changes in our methods of education; from the system of instruction by mutual criticism has grown that of instruction by voluntary visitors, which continued until 1881, and made our classes so deservedly popular. Towards the close of the last decade, however, it became evident that some change would be inevitable. The influence of the new condition of things at the Institute was making itself felt. The Voluntary Examination of former years had developed in 1882 into the compulsory examination for admission to Associateship of the R.I.B.A., which brought at once in its train the coaches and examiners and unprofitable facts of all examinations, with the divided camp of those who hated and those who supported; those who believed and those who denied; Memorialists, and Societies for the Propagation of Registration Bills; and we were all by the ears with a new system and other standards erected among us, to be approved or disapproved as our temperament leads us, but necessary to be acknowledged and dealt with as with existent facts. Exactly five years ago your past President, Mr. Stokes, addressed you from this Chair, and the burden of his words was this:—that systematic teaching had become a *sine qua non*, that we should memorialise the Institute either to undertake this teaching itself, or to help us to do so; the result of which memorial was the handsome grant made by the Institute to us as an educational body—this function of education remaining with us. This grant was made, and has been continued in a broad and liberal spirit, despite the controversy, not only among the parties in at large, but among our own ranks, as to its policy. The conditions have been attested by the Institute to our acceptance of its bounty; and we have took the reform to our system with a will. . . . Now, gentlemen, I turn upon the pillar of my Address to you to-night here, shall our course of study acknowledge these examinations and aid in preparing for them, or shall we stand aside on the neutral ground of giving a good and thorough architectural education, *not* of a nature to be best tested by examination alone? Or, again, shall we oppose these new tests of utterly stereotyped efficiency by formalising our scheme on different lines, and with an intentional discord to the standards and arrangements of the Institute Examiners? I hope I shall have you with me when you have heard the arguments for the resolution at which your Committee have arrived, and in delivering my message I should like to make my own position clear, leaving myself but a Memorialist, and holding still every jot and tittle of the beliefs that that body strove to make clear, differing only from it in its final and exaggerated antagonism to the Institute. The world of education has, as we all know for years, been passing through the fire of examination, and yet Moloch is not appeased; yet upon all sides we hear that the test has not proved itself the purifying medium and final court of appeal that a sanguine generation supposed it. It is noble that the Institute has only come in at the finish, lighting its torches when others are putting out or trying to assuage the flames. I have a certain measure of real hope that before many years are out the most eager advocates of architecture by examination will have found that no form of diploma, no corollary of significant letters, will in any way advance the cause we have all at heart; but that these weighty degrees may even prove something almost akin to a burden upon their bearers and an imposition upon the public, our employers. . . . Nevertheless I know well that our modern world will never more be persuaded to run its appointed course off its chosen rails

of degree and diploma—the examination in some form or other we shall always have with us; and to some natures, to some types of mind, it may possibly be not only necessary, but expedient. It seems to me that we must admit this necessity, and must acknowledge the dangers of this modern tendency, and must arrange both our own scheme of life and the Curriculum of the Architectural Association accordingly. Whatever be our views of the effect, helpful or hurtful, of organised examination, it exists at Conduit Street—a positive institution, a factor in the making of the career of a large body of aspirants to our calling and to the life-work which it involves. Critics, memorialists, societies, may fret as they will—none of our cries has effect upon the one fact that the examination exists and is popular; as matters go at present, whether for good or for evil, an ever-increasing body of candidates press in. . . . Now the only way in which we can combat the examination evils—the cramming the ill-digested knowledge, the triumph of superficial facility over the slower strength of original thought, of mere cramming over artistic research; the only way in which the examination itself can possibly be made to serve a useful end is by the provision of an adequate, thorough, and intelligent education for the many-sided calling of an architect which may be undertaken both before and concurrent with the practical training of practice, which may be thoroughly assimilated and solidly acquired, and which shall maintain as its standard and its key-note that “cramming shall not be.” Shall we refuse our aid to the student who is entering the profession by an honorable road, recognised by the period in which we live? Shall we tell him to prepare himself as best he may, but that we know nought of examinations and their need? Let him seek a examiner that he may be tried and tried for the altar! If we do this I say that we do then an injustice of education, if we do this we have no better a right to our standing of fifty years. We are not to talk of truth and beauty and knowledge; the better we can do this the less harm can come to the world from the degrading rind of the treadmill. The more we can tempt to enter the more freed men there will be for the tower of learning to come. We have we often a rough upon the main needs of an architect's education that it is enough to restate them concisely: (1) That the system of practice or apprenticeship is good so far as it goes, but that it does not go far enough. (2) That it should be supplemented by systematic training by skilled instructors. (3) That that training should be directed to stimulate the artistic faculty—to order the imagination, to give the necessary practical as well as theoretical knowledge in all the accessories of the craft; in short, should consist of work in studio, lectures, classrooms, and in workshop. Such being the general statement of the views to which much discussion and experience have brought us, it seems unnecessary to amplify or to repeat the arguments which we have both heard and read so often during the last decade. Four years ago, when your past President, Mr. Bagzallay, explained our new scheme to the Institute in an Address full of insight and force, his chief point was conveyed in the words, “We believe students want a course which will lead them “up to your examinations, and we believe they are willing “to pay a modest sum for such a course.” The Committee have accordingly decided to bring classes and studio work into line with the requirements of students for the examinations. Such students will find all their needs fully considered and provided for. The Institute has met us halfway, and altered the dates of its summer examinations, both intermediate and final, to suit our classes. At the same time we leave it to the free will of our students to enter for the examinations or not, as they think fit; and we continue a goodly number of classes which are quite beyond examination requirements, but which we recom-



ment to every earnest student who desires the best and fullest instruction in the matters of his art which lie within the scope of a teacher.

Mr. Carøe made also the astonishing statement that a beneficent County Council, sitting in Spring Gardens, contemplates the formation of a School of Architecture to be partly maintained by the ratepayers of London, in opposition to the educational courses of the Architectural Association, which the London County Council Committee on Technical Education describe in a recent report as work carried on "tentatively," or which "may at any time fall to the ground." But ratepayers who, for the sake of peace and quiet, consent to an annual sacrifice at the shrine of St. Bumble are known to turn, like the traditional worm, at most unexpected moments; and conscious that there is now a House of Commons which has not entire confidence in the proceedings of that Saint, they may tell the supreme tribunal how far they are prepared to open their pockets; and enquire, perhaps, whether clergymen, barristers and solicitors, physicians and surgeons, have not as much right to be technically educated at the public expense as architects and handicraftsmen. Nevertheless a significant intimation in Mr. Carøe's Address, which seems to indicate that the possibility of municipal competition has occupied the attention of his Committee, is worth noting. It is as follows:—"Thus we have re-modelled our teaching, forming some of it anew, making some of it continuous of our happiest traditions of self-help and mutual aid. Some of us are prepared to go further and to think it wisdom to consider earnestly if we may not enlarge our borders of usefulness by opening our schools to others outside our elected members. A sub-committee has, in fact, reported in favour of this view, subject, of course, to very necessary reservations. In enlarging upon it I should say that I am fully aware much may be forcibly said upon the other side, and I bind no one by giving you my own deliberate conclusions. May we not offer our educational advantages (let us say) to the engineer and the builder, while our social privileges and association should remain our own, and need in no way be touched by this proposition?"

#### The Durham County Buildings Competition.

The following letter was addressed, on the 30th ult., to the Clerk of the County Council of Durham, and its receipt acknowledged, on the 1st inst., by the Clerk of the Peace of that county:—

SIR,—The attention of the Council of the Royal Institute of British Architects has been called to circumstances connected with a competition recently promoted by the County Council of Durham for the erection of county buildings; and they have had before them both the paper of "Instructions to Competing Architects" and a

large amount of correspondence on the subject, more particularly with reference to the treatment accorded to Messrs. Cooksey & Cox, architects, whose design was placed first in this competition by a duly appointed assessor, and who appear to have kept within the terms of very stringent conditions issued to competitors.

The Council of the Institute, though not unprepared to recognise that the Durham County Council may be acting within strict legal rights and according to the letter of the printed "Instructions," cannot allow the occasion to pass without expressing deep regret at the course which they are informed is proposed to be taken by the Durham Council in depriving Messrs. Cooksey & Cox of the execution of their design, to which they appear morally entitled, whereby great injustice must result to them; a course, moreover, which must tend in the future to discourage architects of repute from submitting designs in competition.

The Council of the Institute, at their meeting held on Monday, 28th instant, directed us to convey this expression of regret to the County Council of Durham; and, in begging you to lay our letter before them, we have the honour to remain, Sir, your obedient servants, WM. EMERSON, *Hon. Secretary*; WILLIAM H. WHITE, *Secretary*.

#### Artistic Furniture and Illicit Commissions.

Mr. J. S. Henry, Artistic Furniture Manufacturer, of 287 to 289, Old Street, London, E.C., has recently offered to a few of his friends "exceptionally good terms in respect to introductions" "you may be able to send me for supplying" "artistic furniture to your clients." Mr. Henry is prepared to "quote prices to allow of an agreed" "upon profit"; and he adds, in the choicest Old Street, E.C., vernacular: "Upon your client presenting your card to me I shall be most happy to conduct *them* round my showrooms and to give *them* every attention for our mutual advantage." There would of course be no harm in issuing such a circular to furniture brokers and others of Mr. Henry's acquaintance, but when he deliberately sends it to members of the Royal Institute of British Architects he offers—not an insult, for that is out of Mr. Henry's power, but an impertinence which is likely to be resented; and, in fact, has been resented by those who object to receiving circulars of the kind even from the most ignorant artists in furniture. Before Mr. Henry next attempts to conduct an architect's card and the said architect's client through his showrooms perhaps it may save his time to be informed that Fellows and Associates of the Institute subscribe to a solemn Declaration that they will not accept any trade or other discounts, or illicit or surreptitious commissions or allowances, in connection with any works the execution of which they may be engaged to superintend; and that consequently they

are likely in future to avoid Mr. Henry and his showrooms as much in their own as their clients' interests.

Mr. Charles Fowler [F.] and the Statutory Board.

At a meeting, held on the 25th ult., of the Statutory Board of Examiners, Mr. Fowler stated that he felt compelled to resign, though with much regret, the office of Chairman, which he had held since 1884, his membership of the Board dating from 1869. Professor Roger Smith was consequently requested to act as Chairman, and Mr. Lacy W. Ridge as Deputy-Chairman, during the remainder of the official year. A resolution was then entered on the Minutes as follows:—  
 "That the Board, in receiving, with great regret, from Mr. Charles Fowler his resignation of the Chairmanship, desire to express their high appreciation of his services on the Board for a period of twenty-six years, and more particularly of the energy, efficiency, and industry shown by him during the eleven years that he has conducted the work of the Board as Chairman."

The late Harry G. W. Drinkwater [F.].

The following obituary notice of Mr. Drinkwater is contributed by Mr. Henry Lovegrove [F.], who enjoyed a long and intimate friendship with the deceased:—

Harry George Walter Drinkwater died suddenly at Wokingham on Sunday the 13th ult. in his 52nd year. He had had a stroke of paralysis in April last, but partly recovered, and was able early in the month of October to go with his assistant to Wokingham on professional business, when he was seized with another attack which proved fatal.

Drinkwater was articled to Mr. Bramwell, of Broad Street, Oxford, and about the year 1867 he came to London as assistant to the late George Edmund Street, R.A. In 1873 he gained the Royal Academy Medal for measured drawings of the tomb of Aylmer de Valence in Westminster Abbey, having a few years before been awarded a Silver Medal by the Institute for measured drawings of Illey Church, near Oxford. On leaving Mr. Street he started practice in Oxford, where his family had resided for some years, and carried out in and about that city many important works, including the theatre, a bank in Cornmarket Street, and an infirmary at Woodstock. He was for many years churchwarden of St. Philip and St. James, where his funeral service was performed in the presence of many sorrowing relatives and friends. He took the highest honours in Freemasonry in the province of Oxford, and took part with the writer and others in starting the "Hiram" Lodge in London.

Drinkwater was elected a Fellow of the Institute in 1882, and had served on the Board of Examiners since 1880. At a meeting of the Board on the

31st ult. reference was made to his decease, and the following resolution passed:—"That the Board feel deeply the loss they have sustained by the death of Mr. Drinkwater, who for many years had given such active and valuable assistance as an Examiner, and they desire to express to Mrs. Drinkwater their high appreciation of the services he rendered to the Board in the conduct of the Examinations."

The late Thomas Candy [F.] and the late E. P. Lotus Brock [F.].

The first column of *The Times*, 6th inst., contained announcements of the death of Mr. Candy and of Mr. Lotus Brock, F.S.A. The former, who died at Brighton on the 5th inst., was elected a Fellow in 1857, his proposers being Professor Donaldson, Philip Hardwick, and his father. He had served on the Council of the Institute, and taken an active part in the work of the Architects' Benevolent Society. Mr. Brock, who died on the 2nd inst., and whose fatal illness began only a short time ago, was elected a Fellow in 1882. He succeeded to the practice of Mr. Edward Habershon, who retired in 1879, having been his partner since 1865, and the pupil of the Messrs. W. G. and E. Habershon as early as 1851.

The Manchester Society's Conversazione.

The annual conversazione of the Manchester Society was held on Friday, the 1st inst., at the City Art Gallery, Mosley Street. The guests, among whom were Sir L. Leader Williams, Dean Moore, Dr. Ward, Dr. Hopkinson, Messrs. T. de Courcy Medd, W. Goldthorpe, Leo Grindon, and Elias Binnart, were received by the President, Mr. John Holden [F.]. The collection of architectural drawings on view was contributed chiefly by members of the society and other architects in and around Manchester. There were also several interesting exhibits. The autumn exhibition of pictures and the permanent collection were on view in the upper galleries, and an amateur orchestra gave a selection of music during the evening.

Additions to the Library.

The Institute is indebted to the courtesy of Mr. J. Douglass Mathews [F.], chairman of the Guildhall Library Committee, for the presentation of Dr. Sharpe's important work *London and the Kingdom: a History derived mainly from the Archives at Guildhall, in the custody of the Corporation of the City of London*, the aim of its author being to go over all the recorded instances in which the City of London interfered directly in the affairs of the kingdom (London: Longmans, Green, & Co., 3 vols.). This work has been printed by order of the Corporation under the direction of the Library Committee. *Ein Proportionsgesetz der antiken Baukunst und sein Nachleben im Mittelalter und in der Renaissance*, by G. Delic,



has been received from the publisher [Strassburg : Karl J. Trübner].

A delightful book has been recently acquired for the Library in George Sandys's notable account of his travels in the East, entitled *A Relation of a Journey, begun A.D. 1610, in Four Books, containing a Description of the Turkish Empire, of Egypt, of the Holy Land, of the remote parts of Italy, and islands adjoining*. This is a copy of the seventh edition published in 1673: the first edition was published in 1615. Two works of a distinguished Oriental scholar of last century, Claudius James Rich, have also been added to the Reference Library: these are a *Narrative of a Residence in Koordistan* and *Narrative of a Journey to the Site of Babylon in 1811, with a Narrative of a Journey to Persepolis* (taken in 1821), and both were published subsequent to Rich's death, and were edited by his widow, the first appearing in 1836, the latter in 1839.

Mr. E. Boardman [F.], architect of the recent additions by which it has been possible to utilise Norwich Castle for the purposes of a museum, has forwarded a monograph on the opening of the museum containing numerous illustrations. Mr. Langton Cole [A.] has presented a pamphlet written by his father, Mr. J. J. Cole, entitled *The People's Stonehenge*, containing several excellent illustrations.

The *Proceedings* of the Twenty-Eighth Annual Convention of the American Institute of Architects 1894 contain the following papers:—

Modern Style founded on Ancient Greek Architecture. By Russell Sturgis (p. 84).

The Evolution of American Architecture. By J. W. Yost (p. 94).

Objective and Subjective. By Louis H. Sullivan (p. 121).

Travelling for Architectural Study. By F. M. Day (p. 135).

Travelling Scholarships. By R. W. Gibson (p. 141).

High Buildings and Good Architecture. By Thomas Hastings (p. 146).

Skeleton Construction and the Fire Department. By T. M. Clark (p. 150).

The Wind Pressure in Tall Buildings of Skeleton Construction. By W. L. B. Jenney (p. 153).

Concrete Construction—its Practical Application. By E. L. Ransome (p. 183).

A Few Words about Acoustics. By E. G. Lind (p. 194).

As no index is given in the *Proceedings*, the above table of contents may be found useful by readers desirous of referring to any of the Papers.

The following publications have been received from their respective Societies: the *Journal* of the Sanitary Institute (vol. xvi., part 3); *Proceedings* of the Institution of Mechanical Engineers (April 1895); *Proceedings* of the Society of Antiquaries (vol. xv., no. 2); *Collections* of the Surrey Archæological Society (vol. xii., part 2); *Memoirs and Proceedings* of the Manchester Literary and Philosophical Society (containing the Annual Report of the Council); *The Geographical Journal* (vol. vi., nos. 4, 5); *Annual Report* of the Dundee Institute of Architecture,

Science, and Art; and the *Annual Report* and *Syllabus* of the Birmingham Architectural Association.

The October quarterly part of the *Journal of Indian Art* (vol. vi., no. 52), containing articles on *Dada Haris Well, Mosque, and Tomb, Ahmedabad*, by Mr. John Griffiths, and *Pottery and Glassware of Bengal*, by Mr. T. N. Mukharji, has been received from the publisher (W. Griggs, Elm House, Hanover Street, Peckham, London). Parts 8 and 9 of *Der Formensehats* have also been sent by the publisher (Georges Hirth, Munich and Leipzig) through Messrs. Williams and Norgate. The excellence of Mr. Hirth's series of interesting reproductions is more than maintained in these later parts. It should be noted that the October number of the *Engineering Magazine* contains a short article by Mr. R. Phené Spiers entitled "Architectural Students' Work Abroad."

Calendars of the University College, London, and of the City of London College, and also *The Edinburgh University Calendar*, for the Session 1895-96, have been received from their respective institutions.

## REVIEWS. XXXII.

(90)

### THE LONDON BUILDING ACT 1894.

*The London Building Act 1894, with Appendices containing Statutes, other than the Building Act, still in force and affecting Building Operations, also the Bye-laws, Regulations, and Standing Orders of the London County Council and of the Commissioners of Sewers of the City of London. With Concise Notes and Cross References. By William Russell Griffiths, LL.B., of the Inner Temple, &c., and Francis W. Pember, M.A., of Lincoln's Inn, &c. 8o. Lond. 1895. Price 12s. 6d. [W. Clowes & Sons Limited, 27, Fleet Street, E.C.]*

*The Law regulating Streets and Buildings in the Metropolis under the London Building Act 1894, and other Metropolitan Statutes, together with the Standing Orders, Regulations, Bye-laws, Forms, &c., of the London County Council and of the Commissioners of Sewers of the City of London. By R. Cunningham Glen, M.A., of the Middle Temple, &c., and Arthur A. Bethune, of the Inner Temple, &c. With Explanatory Diagrams by Alfred Conder, F.R.I.B.A., District Surveyor for Woolwich. 8o. Lond. 1895. Price 20s. net; postage 6d. extra. [Knight & Co., 90, Fleet Street, E.C.]*

The experience which we have already had of the new Metropolitan Building Act is quite enough to prove that its interpretation is in a great many respects by no means easy, and that for years to come we may expect the practitioners of forensic artifice to be busily engaged (if a practical man may speak plainly) in making its meaning perhaps only more obscure. No one need desire to dispute the fact that the municipal reformers in the London County Council were animated by the best intentions in their efforts to improve the regulation of building operations; and no doubt they were also honestly bent upon simplifying to the utmost the work of administration;



but they will probably themselves acknowledge that to a not inconsiderable extent they have failed—that much of what was important in their proposals had to be abandoned during the process of Parliamentary investigation, and that much of what was left became day by day more and more confused. Nevertheless, the Act, as it now stands, is, on the whole, a beneficial measure, and may serve its purpose for a sufficiently long time, with the help of that occasional mending which takes the form of acceptable judicial decisions on doubtful points. The incident is not yet ancient history when a bewildered Judge of eminence, in dealing with the Building Act which has recently passed away, so completely lost patience at last as to exclaim indignantly, “The builders built it, and let the builders explain it!” It seems not unlikely that before long learned successors will have rather to say, “The builders, unfortunately, did not build this new Act, and, therefore, there is no one at all who can explain it!” But be this as it may, it has to be acknowledged as a fact that the community of trained managers of building affairs, who bear the highly respected name of “the architects,” not only have not been the framers of the new law, as most people will think they ought to have been, but are expected to submit their interpretation of its meaning to the judgment of an altogether alien profession. That is to say, the lawyers, who took the supreme command forty years ago, retain it still. Prior to the year 1855, there existed a purely expert court of three architects for everyday administration, called “the Official Referees,” and their directions carried all the weight of judicial decisions, but for one apparently harmless and benevolent arrangement whereby they were provided with a legal assistant in the person of a “Registrar,” endowed with the qualifications of a barrister. True to his nature, however, as a fountain of all knowledge, this Registrar, in course of time, assumed the dignity and powers of a controller, and declined to “register” what he very excusably failed to understand, so that there was a deadlock. Referees and Registrar were therefore eventually both bundled out, and their jurisdiction transferred at haphazard to the Metropolitan Board of Works and the Police Courts—an objectionable system which is still retained in spite of a thousand protests, and retained with every likelihood of being continued as long as the building world of London will submit to it. Thus it is the Police Magistrate who is master of building administration, and by no means the architect. True, there are District Surveyors, and they are generally supposed to be monarchs of what they survey; but their monarchy in difficult circumstances is very much akin to that of the police constable on his beat, although with this difference, that the constable must not be “interfered with,” whereas the surveyor may be lawfully

resisted with tooth and nail. It is true also that there is a “Tribunal of Appeal,” but it has to do with property agency alone and not with structural building, and is constituted accordingly. On the whole, therefore, architects must be content to face for another generation the element of legal ascendancy in full force, and must consequently have bulky “law books” for reference. The two treatises now before us are such law books, and no one can glance through them without being led, at any rate, to thank the authors for these elaborate results of their patient and intelligent labour.

The general scheme of both books is the same, and the mode of treatment is the same: the one is larger in bulk than the other, and of course contains more letterpress; but most plain men of business will probably think the smaller volume quite large enough, and of sufficiently alarming aspect. We need only say, however, that this is merely because they are law books— austere and grim by nature, and the reverse of light reading by necessity. Speaking in general terms, what they supply is first, of course, the text of the new Building Act in detail; secondly, the text of such portions of other Acts of Parliament as are still collaterally in force; thirdly, the By-laws and the like of local governing authorities; and fourthly, and chiefly, current notes of legal explanation and citations of Cases decided by the Courts (sometimes with eyes open and sometimes with eyes more or less shut) which constitute “the law” for the moment upon doubtful points, arising of course under the old *régime*, but still applying to the new. A carefully compiled index is appended to each work, and something like an estimate of the painstaking of the authorship may be formed from the fact that in the smaller book this index occupies thirty pages, and in the larger one nearly one hundred. It may also be noted that in the former the references to Cases amount in number to about two hundred and fifty, and in the latter to not much less than eight hundred. As regards, again, the voluminousness of the notes, it is only necessary to observe that the greater bulk of the second treatise is manifestly due almost entirely to the greater copiousness of these valuable memoranda. At the same time, it is only fair to remark that in the title page of the smaller book the conciseness of the notes and cross references is apparently made a special merit.

It may be assumed that beyond the strictly legal limits of their undertaking the authors in both instances do not pretend to go; and it is on this ground that, with all possible respect to them, one may express a sort of hope that architects and builders, although thinking it desirable to possess one or other of the books, or even both, may in practice find themselves largely relieved from the dismal necessity of studying them. Law is law, no doubt; but building is building, and is

seldom, if ever, to be aided or comforted by legal wrangling. In other words, the building operations of London are best controlled by the plain common sense of practical constructive experts; that is to say, by public "surveyors" of sound experience and prudent judgment. Those who know best will always tell us the most emphatically that whenever Building Act business goes beyond the District Surveyor it goes into trouble. What the building public want is a perfectly qualified and trustworthy public expert with very much of a free hand, not a rigid, metallic martinet under "gloriously uncertain" law. The thousand-and-one little questions of rule that are unexpectedly cropping up day by day in the actualities of "bricks and mortar" demand for their rational adjustment a rational rather than legal mind, a discreet, discriminating, elastic, compromising intelligence, knowing the reason why, and satisfied with a fair and honest recognition of that reason. At the same time the principle cannot be ignored that the *lex scripta* is a contract entered into between individual interest and public interest for the eventual benefit of the one as much as the other. All that the building world asks for is that this contract shall be so dealt with and so interpreted on both sides honourably and liberally.

Whilst recommending these useful treatises to the consideration of all concerned in the more important business, one cannot help expressing a little astonishment at the way in which the general building work of London is daily carried on by the trades in ignorance of the most common directions of the law. Everybody above the rank of an excavator knows that there is a Building Act to be complied with, and yet scarcely any one belonging to the operative classes seems to have ever seen it, except, perhaps, in the form of an unread appendix to a price-book. Persons of ordinary intelligence would take it for certain that the foreman of even a small job, for example, would carry a copy. On the contrary, the assertion may safely be hazarded that not one in a hundred of those practical men ever takes the trouble to think of it. The anxiety which this thoughtlessness gives to the official mind is often very great, of course; but what is more serious is the constant risk of unintentional and undiscoverable mistakes which so very little extra knowledge would so very easily prevent. The voluminousness of the new Act will probably be found to encourage this condition of things; and if the suggestion may be made without giving offence, why should not some of the younger or more ambitious of the District Surveyors set to work at once upon a free translation of the essence of the law into the form of a concentrated compendium or table of its common rules and practice, which the artisan could keep in his pocket with his pipe? Or, again, might not the County Council, or the District Surveyors' Association, establish a little examination for

clerks of works and foremen, if no more, on which to give certificates of competency in this really useful branch of knowledge?

ROBERT KERR.

(91)

### GOTHIC MASONRY.

*Rational Building: being a Translation of the Article "Construction" in the Dictionnaire raisonné de l'architecture française of M. Eugène Emmanuel Viollet-Le-Duc. By George Martin Huss, Architect, Member of the Architectural League of New York. Large 8o. London and New York, 1895. Price 12s. 6d. net. [Macmillan & Co., Bedford Street, Covent Garden; and New York.]*

The question has often been asked why there is no English translation of the *Dictionnaire raisonné de l'architecture française*, and the answer has usually been, that anyone who really appreciated Viollet-Le-Duc would take the trouble to read him in the original—indeed, would prefer to have his own words just as he wrote them. But the high-pressure state of existence common with American architects probably does not leave them time for reading in any language except their own, so with a most praiseworthy desire that his fellow-countrymen should not thereby be debarred from the enjoyment of a masterpiece of architectural literature, Mr. Huss has provided for their special needs an American version of one of the longest and best articles in the *Dictionnaire*, that entitled "Construction." This has always been a favourite one among serious students, and has been rightly regarded as the best existing treatise on the science of Gothic masonry. More than this cannot fairly be claimed for it, and the title given by Mr. Huss to his translation is somewhat fanciful, if not positively misleading. French Gothic, too, is almost exclusively its subject, for although Viollet-Le-Duc, with a breadth of view somewhat unusual among French artists of his day, had extended his researches so far as to be able to mention some English developments, these notices are comparatively brief and unimportant. The fact, however, that the work practically treats of nothing but French architecture will probably not be found any detriment to it in America, where the whole course of contemporary architecture follows French in preference to any other leading; it is therefore very likely that Mr. Huss's venture will meet with good success among his own countrymen, even if it should not succeed in supplanting the French editions amongst ourselves.

As to the style of the new version the translator attempts to take the word out of the critic's mouth by his confident assertion in the Preface that "great care has been exercised to obtain nice "distinctions of meaning; the full force of the "French idiom has been seized upon; and the "endeavor has been to make this work appear as "little like a bald technical translation as was



"consistent with the incisively keen remarks of 'the gifted author.'" Whether this is actually the case is perhaps a question for the reader to decide. But the work of translation has certainly been carefully and conscientiously performed, and, taking the result as a whole, it gives a very fair interpretation of the sense of the original. In many instances, however, the translator might be readily pardoned if he had not been quite so literal. "Broken arch" and "divided arch" are very uncomfortable synonyms for "pointed arch," as is also "full-centered" for "semicircular"; whilst the constant occurrence of such phrases as "It is there that one can always recognize," "It is in the nave that one must admit," "But there is in that an attempt which," "The arches built in this way form," give an appearance of merely mechanical translation to a work which is in reality of a better class. What would be said to a schoolboy who should venture, as does Mr. Huss, to translate "*Cet ensemble présente une stabilité parfaite*" by "*This ensemble presents a perfect stability*"? Still, on the other hand, we may read of architects being "bothered" and "concerned" by constructional problems, which seems a straining of freedom to its limits.

All the original illustrations, which had so much to do with the favourable reception of the *Dictionnaire raisonné* in England, are repeated in *Rational Building*, though somewhat reduced in size, which in some instances takes away from their clearness. The type, unfortunately, is not an improvement on the original; it is not only smaller, but is rendered very unpleasant—at any rate to English eyes—by the tendency which the words have to run together, caused by the combination of narrow spaces between the words with wide spaces between the individual letters. "Metres" and "centimetres" appear to be more congenial to American readers than to English ones, for no attempt is anywhere made to give their equivalents in feet and inches. Possibly the time may not be long before we shall, by Act of Parliament, be compelled to employ the metrical system; but it may at least be hoped that when that time does come we shall be permitted to use more homely terms to express the new measures.

Several emendations of Mr. Huss's renderings have been suggested by Mr. R. Phené Spiers in a recent letter to *The Builder*, of which the most interesting relates to the "tas-de-charge," for which there is no accepted equivalent in English, even Professor Willis, who did so much towards clearing up and improving architectural terminology, using it in its French form. "Mr. Huss translates it," says Mr. Spiers, "a flat bed (p. 120), which gives no conception of its meaning. 'If he had put a 'flat bed or horizontal course' 'pile' it would better have expressed the meaning; a term which might in course of time have been reduced to 'the pile' when speaking of a

"vault." In another place (p. 224) Mr. Huss gives for "assises superposées formant tas-de-charge," "courses piled up to form a support," which, again, is hardly a satisfactory translation. Possibly the term "springing-pile" might meet the case. A word seems to be wanted which is equally applicable where the same device is used in other arched constructions, quite independently of vaulting, as in an ordinary arcade; "vaulting-pile," besides being inappropriate to such instances, might easily be taken to mean a larger portion of the vault than is actually intended. This plan of building up several level courses of solid masonry above the capital, before the inclined voussoirs are started, is a sound method of construction worthy of more attention than it seems to have received. It has the great advantage of providing, in the direct vertical line of the pillar, a firm pier-shaped base for the superstructure, instead of leaving it, as is too common, merely balanced on an inverted triangle, often composed only of rubble, with a consequent tendency to bring awkward stresses to bear upon the haunches of the arches. Wherever ancient examples of this arrangement are found in England, they are almost invariably in works of the best period, and great ingenuity and artistic skill are often shown in reducing or "stopping" the hollows of the arch-mould, as they come down upon the "springing-pile," so as to leave as broad and solid a base as possible over the abacus. It is no doubt a great saving of trouble to the draughtsman to run the lines representing his moulded voussoirs right down on to the capital, but this always involves some reduction of the bearing-surface, and in many cases diminishes it very seriously.

On one constructional principle of considerable importance the advice given by Viollet-Le-Duc is directly opposed to the teaching of some of our most familiar text-books. Most of us have read, for instance, in our "Rivington" that large arches ought to be built "with blocks set in cement running through their thickness at intervals, so as to form a bond right through the thickness of the arch. Stone bonds may be used instead, cut to the shape of a voussoir. These bond blocks should be placed at the points where the joints of the various rings coincide. . . . Thick arches bonded throughout their depth are sometimes used for large spans." It is hard to reconcile these recommendations with the mechanical principles so clearly laid down by Viollet-Le-Duc. Writing of the later Romanesque architects, he says (quoting Mr. Huss's version):—

They had observed that the greater the section presented by the stones of an arch from the intrados to the extrados, the greater would be the disorder occasioned by the movement produced in that arch. They were not the first who had recognized that law. The Romans, before them, when they had large arches to raise, had been careful to make them of several rows of voussoirs, concentric, but independent of one another. The arches built in this way form,



as it were, so many rings, acting separately and preserving much greater elasticity, and therefore greater resistance, than in an arch of the same section built with one ring of deep voussoirs (p. 32).

It is interesting to note that this view of the theory of arches is the same as that held by one of the best English authorities on the mechanics of construction, whom, however, on account of differences upon other matters, an architect cannot now unfortunately even quote without the fear of incurring reproach from his brethren. But, even if Lord Grimthorpe be really an enemy, "*Fas est et ab hoste doceri*" is still a wise and true maxim, and there are few constructors who could not learn a good deal from the profound and ingenious author of *A Book on Building*, who, when discussing this particular question, says:—

It is well recognised by engineers . . . that the several courses of an arch ought to be independent; and though at first sight it looks weaker to unmechanical eyes, it is really stronger not to have long through bricks or stones from intrados or "soffit" up to the extrados or outside; because there can only be three bearing points in an arch or any section of it—two at the intrados and one at the extrados. And as this applies to each course of brickwork, an arch of many separate courses is so many arches, while one of the same thickness of "throughs" is only one arch (p. 152).

Some of the other advantages which are secured by providing for a certain amount of elasticity in masonry will be found mentioned in the article on "Construction" in treating of the size of stones and the thickness of joints. It is especially worth noticing this, because in England, just as much as in France, one continually sees buildings disfigured, and even seriously damaged, by the absurd modern craze of masons and clerks-of-works for producing the thinnest possible joints, often without any real mortar-bed at all. Through this pernicious system, ordinary settlements, which naturally occur in every building, instead of being harmlessly distributed and dispersed by the yielding of the joints, become sources of dire mischief, cracking and even shivering in pieces the most solid-looking work. There were very good reasons for using these "coarse" and "clumsy" joints, as they would be called now, which we find in buildings remaining sound and serviceable after the wear and tear of many centuries. Squeezability, though not generally regarded as an evidence of strength, is nevertheless, in the case of buildings, a most important element of strength and permanence.

Although *Rational Building* covers only a very limited field, and as a translation cannot be ranked with Mr. Bucknall's spirited versions of other works by the same author, yet its publication may have very good results, and certainly deserves a notice of welcome. It may become the means of making known the writings of Viollet-Le-Duc to a new generation, many of whom might otherwise grow up in ignorance of the most instructive and most stimulating lessons in architecture ever

offered to the world. It would be far better, indeed, that Viollet-Le-Duc should be known only by detached translations, like the present one, than that he should ever be forgotten or neglected. But it is greatly to be hoped that readers of this volume will not remain satisfied with only a specimen of the teaching of its great author, and will go on to a real study both of the other articles in the *Dictionnaire*, and also of the *Entretiens sur l'Architecture*. The former is by no means, as might perhaps be supposed from its modest title, only a text-book for the mediæval specialist; it really goes a long way towards being an architectural encyclopædia; while of the latter it may be said that anyone professing to take even the most general interest in architecture of any sort may be expected to be well acquainted with it. There are many other books by Viollet-Le-Duc which may also be read with much pleasure and profit, but these two, at least, have an importance which is far beyond being merely local or temporary: they abound from beginning to end with invaluable lessons for workers in every school and throughout all time.

It is impossible to mention Viollet-Le-Duc without being tempted to dwell on the extraordinary combination of talents which entitles him to be considered as one of the most remarkable men of this century; but his life and works have already been so graphically and sympathetically described in the pages of the *TRANSACTIONS*, by one who knew him well, that I cannot do better than refer any readers of *Rational Building* who may desire to know more of the man to whom they owe so much to Mr. Charles Wethered's two admirable Papers.\*

ARTHUR S. FLOWER.

(92)

## PRINCIPLES OF RATING.

*The Principles of Rating, practically considered as they affect the Assessment of Railways, Docks, Tramways, Gas and Water Works, Coal and other Mines, Electric Lighting Works, Manufactories, and other Hereditaments; with a complete Digest of all the important Cases, including several Decisions not previously reported, a Collection of the principal Statutes, and the last Orders of the London County Session. By Edward Boyle, of the Inner Temple and of the South-Eastern Circuit, Barrister-at-Law, and G. Humphreys-Davies, a Fellow of the Surveyors' Institution and an Arbitrator under appointment of the Board of Trade. Second edition. Roy. 8o. Lond. 1895. 1100 pages. Price 25s. [William Clowes & Sons, Limited, 27, Fleet Street, E.C.]*

The tendency of the amateur legislator towards Betterment, the taxation of ground rents, &c., is strong proof that at no period was it more necessary than at present to illustrate and enforce the sound principles of rating; and the passing of several new Acts and many new legal decisions

\* See *TRANSACTIONS*, Vol. XXXIV. O.S. p. 210; and Vol. IV. N.S. p. 62.

since the first edition are additional reasons for this publication. The importance of the interests explained in this book is to some extent shown by its greatly increased bulk compared with that of the first edition, and by the large number of new cases reported. As the writers justly say in their Introduction :—

With the steady but sure tendency exhibited by local rates to increase in amount, the necessity for a correct valuation list in each parish becomes most important, while the enormous development which has in modern times taken place in industrial enterprise, and in the extent, magnificence, and value of our buildings—a development which appears to be going on at an increasing ratio—enhances the difficulty of solving the complex problems which present themselves in the valuation of such property (p. 1).

In this connection (if custom had not dulled our sympathies) we could not fail to be profoundly moved by the consideration of the increasing magnitude of the mass of humanity given over to hopeless, grinding poverty, to woes which the machinery of Guardians, Assessment Committees, and the like is designed to alleviate but cannot cure—a state of society surely undreamt of by the draughtsmen of the Act for the Relief of the Poor in the 13rd year of Elizabeth.

It is not to be expected that a book of the severely practical nature of this one should deal with the history of Poor-law legislation, but the surveyor may derive interesting information on this important social problem in a condensed form from some of the earlier Papers read before the Surveyors' Institution, such as Edward Ryde's *Parochial Assessments*, 25th January 1869, or Thorold Rogers's Chapter on the Poor Law in his *Six Centuries of Work and Wages*. Other early Papers of the Surveyors' Institution, and the discussions thereon, dealing with the rating of railways, machinery, and country mansions, present diverse views of the subject, which may be recommended to the notice of the rating surveyor who may not be familiar with them.

The association of a barrister and a surveyor in the production of this book has probably contributed to confer exceptional value upon their joint production. For the expert valuer must not only possess a special knowledge of the property he assesses, such as mines, machinery, railways, &c., but he must also be familiar with the circumstances and bearings of a great number of legal decisions; moreover, he must combine with this knowledge a long experience and a mature judgment, for the recorded decisions embody many subtle distinctions, and the ambiguity of some of them has in its turn given rise to fresh litigation. The obscurity of some of the clauses of Acts intended to amend previous ones has also been a fruitful source of dispute. But be the valuer never so expert, he will still be exposed to the vagaries of Assessment Committees, and an appeal from their decisions is very often unsuccessful. The unsatis-

factory state of the machinery of appeal is an old grievance, and on this the authors may be quoted as follows :—

The dual object of the Act of William IV., as stated in the preamble, was "to establish one uniform mode of rating "for the relief of the poor throughout England and Wales, "and to lessen the cost of appeal against an unfair rate." That a considerable measure of success attended the attempt there can be no doubt; but that much remains to be done before the costs of appeals against rates are reduced within a reasonable compass must be readily admitted. The cost of an appeal to Sessions against small assessments is practically prohibitory, while in more important cases they act as a great deterrent to ratepayers seeking redress. It is therefore important that something be done to render the proceedings less cumbersome and costly, so as to enable both the ratepayer and the rating authority to obtain a judicial decision without incurring undue expense or risk (p. 119).

Many rating surveyors will agree with the remark of the writers as to exemption from rating: "The policy and fairness of granting exemptions "of any kind may be questioned." In the practice of rating the legal and surveying elements are so intimately connected that a separate consideration of them here is, perhaps, invidious; but the examples of valuation may be specially commended for their practical character, sufficiently shown, among others, by the valuation of a coal-mine, a railway, an electric-lighting interest, docks, and a gas company. The various theories of rent as propounded by Adam Smith, Mill, and Ricardo, and their application, in the section "Application "of the Theory of Annual Value," are very clearly explained.

The book is characterised by precision of thought and lucidity of style, and its comprehensiveness leaves little to be desired. Few rating surveyors have enjoyed the felicity of rating a lighthouse or the property of a foreign ambassador, but both these subjects are dealt with in these pages. The digest of cases is a summary of every rating decision for the last 150 years. Marginal notes of the years have been adopted in this edition, and are an improvement. The forms of returns, some of them new, are a useful addition. Those clauses of the Acts which affect rating are appended, and in these the portions repealed by the Valuation (Metropolis) Act 1869 are distinguished by being printed in italics. The index (and in indices there is a considerable range of quality) is very clear, and the marginal summaries to the text, which were not used in the first edition, greatly assist reference. A few of the conclusions drawn from the reported cases are perhaps open to doubt, but they afford so much room for difference of opinion that they need not be mentioned here.

The book is an example of careful and thorough work, and must convince the experienced reader of the knowledge and judgment of its authors. It may be recommended to the surveyor as an exhaustive and reliable book of reference on the subject which it treats.

JOHN LEANING.





### ARCHÆOLOGY, HISTORY, AND ART.\*

That a close relationship exists between Archæology, History, and Art can scarcely be questioned. Whence does this arise, and how and to what extent is it of value in connection with the actual practice of architecture? The connecting link, it is evident, lies in the continuity, the traditional character, of all art, and particularly of architecture. That which was declared in ancient times has no manner of interest for the engineer—*qua* engineer at least—for his work, both as to requirements and methods, is essentially of to-day; but for the architect, who is ever seeking to assimilate and reproduce in his work the spirit of the older masters, even when endeavouring to solve the very different problems that confront him to-day, the doctrine and practice of the ancients are of paramount importance. Of course this influence is one as to the value of which very different estimates will be given by different architects according to the style of work they are principally engaged in, and the manner in which they approach it; and it may be worth while for a little to examine the subject somewhat more closely. We shall endeavour, then, in the first place to analyse these three—Archæology, History, and Art—and to differentiate as clearly as may be between them, and thereafter consider on the one hand how far the influence of the two former is beneficial and of real value in connection with our everyday work; and, on the other, whether such influence is not by some allowed to preponderate to a hurtful extent, and even at times to a confusion of identity between the means and the end. It is neither desirable nor possible from the present point of view to differentiate very closely between Archæology and History. As a matter of fact, they overlap each other constantly, and in this connection are so closely interlinked that the one can scarcely be said to be complete without the other. Broadly speaking, however, it might be said that in the study of the past the one is concerned with monuments, the other with events; the one with the actual details and arrangements of the buildings, the other with the significance of these as made clear by the habits and actions of

the society of the time. The third term of the title, Art, is of course on an entirely different plane, and for purposes of comparison we may express it in its widest sense as the creation of the beautiful. Architecture, being that branch of art which for the moment more especially concerns us, I take to be the endowing with beauty of form and colour (not as something added but inherent) buildings whose primary meaning is the furnishing of man's requirements in the way of shelter. I naturally take the view of art as an actual occupation, not as a theoretical study, and the relationship between the terms of our title may then be put in a concise form by saying that art, from our point of view, is concerned with the design and erection of buildings in the present time; that the art in these buildings is a necessary and natural outcome and development of similar work in the past; and that archæology and history are the sciences by which we best arrive at a knowledge of such work. It will be understood, of course, that in speaking of architecture primarily as a fine art I have no desire to narrow its scope by excluding from its province the many phases of practical work which form part of our daily experience, or to minimise the importance of these. Such, nowadays, are necessarily and legitimately enough comprehended under the general name of architecture, the profession; but, in the first place, it must be remembered that it is only in so far as it is an art that architecture is differentiated from the work of the civil engineer and the builder; and in the second, that it is as such only that its relationship with these other studies comes into play.

In order to make our analysis still clearer, consider what I take to be the spirit in which the archæologist and historian, and what that in which the architect would approach, for the purpose of study, an ancient castle. To the first every stone, to the second every charter and record are full of interest; with much ingenuity and argument will they reconstruct from these the history of the place and the old-world life of the men who built it and lived within its walls. The mouldings are interesting because from them can be traced what local, what foreign, influence was present, with many other particulars bearing on the precise period of the building's erection. The sculptured stones are so much family history, and the ruder they are and the harder to decipher, the better. But for the artist, and especially the architect, the interest of the building is other than these: its plan, its design, characterised throughout by power and beauty, the manner in which the materials used produce their effect, the proportions of its solids and voids, its mass and outline—such are the points which attract his attention and compel his study. By him the mouldings are regarded for the beauty and character of their profile, for their scale to the materials and surroundings; the sculptured stones from the position in which they

\* Being a portion of Mr. Paterson's Presidential Address to the Glasgow Architectural Association this Session.



are placed so as to give point and effect to the design. Now these diverse and various interests are each entirely praiseworthy and justifiable; they are even reconcilable, and may quite well be found in the same individual, but in their essence they are diverse and even antagonistic, for the one is the handmaid of science, and the other of art. In the lack of clearness on this point lies the danger. I need scarcely insist here that architecture, if from nothing else than its close dependence on construction, is bound to be of all the arts that most closely ruled by tradition. We can scarcely think of design apart from those symbols and formulæ that have come down to us from the past. Further than that, I but repeat an opinion previously expressed by me in saying that the insistence on the traditional, the national, and even the local type constitutes at once one of the main interests and healthiest signs of a living architecture. But the traditional and archæological points of view are totally distinct; and while the one makes for righteousness, the other, especially when its presence and influence are not fully recognised, is dangerous and generally hurtful. Under the guidance of the former (the traditional) we accept and make use of types handed down to us, happy to preserve the continuity of our art by employing such as are fittest and best able to express the modern requirements which we are seeking to satisfy; while we reject those that have no longer any meaning or which it is not possible to mould and adopt to present uses, seeking at the same time to preserve that nobility, directness, and singleness of aim which we find to characterise the best of the old work. From the latter (the archæological) point of view, the scientific knowledge that a feature, a motive, is old, without any reasoned appreciation of its beauty or fitness to modern needs, is sufficient warrant that it should be reproduced. Hence the gargoyles which never spout, which would not in fact be allowed to do so; the battlements which shelter from no assaults because our protection is of the law and not by force of arms; the ponderous buttresses with no thrust to counteract; the temple porticoes which shelter no one, because they are not in any one's way; the sham gun-ports, and the oft-quoted turrets with no insides. All this is but science of a kind, dry-as-dust knowledge out of place, hurting and hindering the free development of an art, which, if it is to be of any use, must be living, reflecting the needs, the sentiments, the aspirations of the time.

Other manifestations there are which for praise or blame must be attributed to the historical or archæological aim in art. Of such are the various eclectic schools of painting which have arisen, as that of Caracci and his followers in Bologna during the later sixteenth century, and the pre-Raphaelite movement in our own day, and all the various revivals in architecture, be they Gothic, Greek,

or so-called Queen Anne. These all, in a righteous spirit of revolt against, or complete denial of, any existence in the art of their day, set themselves more or less vainly to turn back the hands of the clock; instead of the spirit of generally unconscious receptivity and the single desire for beauty which should characterise the artist mind, they are fain to reproduce, with toilsome study and research, the work—and not infrequently therewith the very tricks and failings—of an alien race or long-past-away period. Even the great Renaissance itself was not free from this reproach, for such I cannot but believe it to be; but the eager, living spirit of the time, with its new requirements, and the very greatness of the men who were its exponents, were stronger than their reverence for the past, so that, instead of reproducing, as they thought, the art of that earlier race on which their eyes were turned, they were in reality giving birth to a new and living art—an art of such vitality and flexibility that in spreading, and continuing to spread, among the nations it has received from each something of a national character. While to this (the archæological) spirit we owe, therefore, in some degree the Renaissance, its action is specially manifested in one particular development of that movement—the publication of books on architecture by such as Vignola and Palladio. Vitruvius was their father. Of their children, especially in these latter days, who can tell the number? The canons of an art thus formulated as laws savour of the scientific standpoint and formalism, and are to be accepted, in detail at least, only under restrictions; but it is to be remembered that these were not a collection of arbitrary rules, but the summing up, so to speak, of the practice of the masters. Vignola's book, for instance, in which he lays down the proper proportions for the various Orders, and which has formed the point of departure for all similar works published since then, was not a compilation of arbitrary, self-evolved ideas, but the result of careful and systematic measurements of the best work of Rome and the Renaissance; and the aggregate results obtained therefrom and the work in itself thus measured were not produced by the application of hard-and-fast rules, but by the cumulated experience of a long line of great architects as to what was right and beautiful in proportion. That a column in stone is satisfying to the eye when its height is eight to ten times its diameter, a window-opening when it is in the proportion of two squares, is as certain (with many other "laws" of like nature), if as difficult to explain, as that in music the third, fifth, and octave are in harmony with the dominant. These, and such as these, are the data with which we produce our architectural design, as the notes of the scale a musical composition; and it is only when novel materials intervene, or in a particular situation, as it were, in a musical progression, that variations, even to

the extent of discords, are admissible and even admirable. To ignore and run counter to such generally accepted canons is naturally the easiest and consequently the most popular way to be original, but it is not always the most successful from an artistic point of view; for the student the archaeological standpoint, even in an exaggerated degree, is to be preferred.

In one department of the architect's work antiquarian knowledge finds its proper sphere—for which, indeed, it is indispensable—that of the restoration, whether on paper or in stone, of ancient monuments. The former is a branch of architectural study which is little prosecuted among us here, and that, in many respects, to our loss. Regarding the latter—the actual restoration to their supposed former state of ancient buildings which have fallen into a state of disrepair—the expediency thereof is a point round which argument has waxed hot, and upon which I do not feel disposed to enter. This much may be said, that whether restoration is right generally depends on the restorer; while from the theoretical point of view we, as architects, must consider a beautiful building to be a worthier object of contemplation than a dismantled and ivy-clad ruin. Even here, however, we have to dread that narrow scientific spirit in art in which knowledge so distorts appreciation as to recognise beauty in the work of one particular period only, and which did not hesitate within recent years to sweep away the exquisite Renaissance work of the sixteenth and seventeenth centuries in order to replace it with modern thirteenth-century work.

Thus far we have dealt almost exclusively with the dangers of the archaeological standpoint. That such do exist for us as architects is, I think, undoubted; but they exist only (as I would again insist) when there is confusion between the provinces of archaeology and art, and the former is put in a false position; when, although essentially in its nature a science, it is expected or unconsciously allowed to occupy the function of a creative art. That a building is old is not in itself an absolute guarantee that it be good in design, nor is it sufficient criticism of a modern building that it is or is not correct in its style.

The position in this respect has greatly changed within recent years. With some of our younger students the tide of reaction seems at times to set too strongly in the contrary direction, and to set at naught not only archaeology but tradition and the fundamental canons of the art. However this may be, it is scarcely possible now to return to the state of feeling of a generation hardly yet passed away, when not to design in the particular style of the revival in vogue—and that in the minutest details—was to be anathema, was to put oneself outside the pale and render oneself unworthy of the name of architect. Yet even to-day, as the frequent repetition of old features rendered

meaningless in modern work shows, the confusion between the two principles is by no means so uncommon that it can afford to be ignored. But freed from this misconception, accepting archaeology for what it is, as a scientific aid to study, and associating with it its necessary complement of history, it is difficult to imagine any subject more worthy the attention of the architectural student, and this for several reasons. In the first place, his professional training gives, or should give, him a special aptitude for and interest in such work. His interest in building to-day almost necessarily, and apart even from the traditional aspect of his art, carries with it an interest in the work of a similar nature in earlier times; while his appreciation of the possibilities and difficulties of planning, his knowledge of construction, and his power of sketching, measuring, and laying down buildings on paper, are all essential qualifications for the work. The more we study intelligently the works of the past, the more we shall appreciate the intricacy, the nobility, the power of that art whose watchwords are "Design with 'beauty, build in truth.'" It is only when we approach such works on all sides and in detail that we thoroughly learn to appreciate them. It is possible, of course, to study a building purely as regards its artistic aspect; but it is evident that if we go to it with some knowledge of its history and inner meaning, and with the desire to learn more from written records and constructional details, our interest will be increased all round, our knowledge rendered more exact, our first inferences as to the meaning of its arrangements and details confirmed or corrected, and our appreciation of its beauties heightened. The scientific knowledge, however unimportant from our point of view in itself, will bring in its train a deeper and fuller artistic insight. We shall be like Saul, who, seeking his father's asses, found a kingdom. Hence the value of lectures, which it were surely impossible to follow without an immensely increased appreciation of the interest surrounding those works of the past the story of the origin and growth of which, with the manner of life of their old-time builders and inhabitants, is vividly portrayed. Hence the advantage of studying beforehand all that is to be learned of the archaeology and history of ancient buildings. It does not matter a rushlight from the point of view of our actual work to-day whether this bishop or that founded a particular aisle, whether a chapel was really fourteenth-century work, or was carried out a century later in the preceding style, so as to be in harmony with its surroundings. That we should know with certainty if the founder's tomb is in existence or not, or even that we should be able to say that a moulding is early, late, or transitional, will not influence one iota our powers of plan and design; all such knowledge is extremely interesting and



useful no doubt in its own sphere, but its true importance to us is that in gaining exactness of knowledge as to such details as these we are bound to increase our knowledge of the work itself, of the constructional difficulties and the means by which they were overcome and rendered unexpected points of beauty, of the infinite variety, the enveloping harmony, and the crowning beauty of the building which through years, and maybe centuries, of growth ultimately reached the completed form in which we see it. Therefore, while I have sought, according to my light, to place history and archaeology in their true relation to art, while I would exercise caution as to what I believe to be a hurtful confusion as to their powers and issues, I would strongly recommend them as most fascinating, most profitable, and well-nigh essential subjects of study for us all. By such studies we shall not only increase our interest in our art, and enhance our power of design, but from our greater knowledge of the difficulties and appreciation of the beauties of old work we shall of necessity learn a deeper reverence for the architects, known and unknown to fame, whose thoughts and very lives have thus through the long centuries been recorded in stone. So also shall we the better recognise the responsibility of leaving behind us in our turn, and according as opportunity is offered us, the monuments of to-day and of ourselves to form the study of the historians, archaeologists, and architects of future generations.

Glasgow.

ALEXANDER N. PATERSON.

## NOTES, QUERIES, AND REPLIES.

### "Drain" and "Sewer" in Law.

Several decisions on the much-disputed question of the distinction in law between a drain and a sewer for the purposes of the administration of the Public Health Acts will be found reported in the last volume of the JOURNAL; and a learned contribution on the subject from the author of the treatise *Validity of Contracts in Restraint of Trade* is now given.

From ARNOLD B. JOLLY, B.A., Barrister-at-Law—

The problem as to what constitutes a drain and what a sewer, for the purposes of the Public Health Acts, has not yet been satisfactorily solved. The importance of the distinction is obvious: a sewer, unless made for profit, vests in and is *repairable by the local authority*, whereas a drain is repairable by the owner of the premises whose sewage it carries off. Under these circumstances, one would have thought it an easy matter for the Legislature to have fixed a final and satisfactory definition for these two words. Unfortunately, however, the Public Health Act 1890 appears to have been drafted by some person who was ignorant both of the previous Acts and of the decisions thereon. The result of this legislative bungling

is that the Judges have been unable to arrive at any clear conclusion as to the construction of the Acts. Thus we find Wills and Wright, J.J., in January 1895 throwing doubt on a decision which they themselves had given only a year before, while Cave, J., three months later, confessed that he was entirely unable to understand the recent judgments of his brethren Wills and Wright.

Prior to the Public Health Act 1890 the law on the subject was comparatively clear. By section 4 of the Public Health Act 1875 a drain is defined as meaning "any drain of and used for the drainage of one building only on premises within the same curtilage" (i.e. fence or boundary). A conduit which does not come within the above definition is a sewer. Thus, where two houses (not within the same curtilage) have a common conduit, this conduit ceases to be a drain and becomes a sewer as soon as it receives the sewage of the second house, even though it is laid in private ground (see *Travis v. Uttley*, 1894, 1 Q.B. 233). The definition of a drain under the Metropolitan Management Act 1855 is precisely the same as in the Public Health Act, but with this addition, "and shall also include any drain for draining any group or block of houses by a combined operation under the order of any vestry or district board." This was, no doubt, intended to meet the case of a group of houses situate some distance from a main sewer, where, instead of constructing a separate drain from each house, it was more convenient to carry the sewage of all the houses in a single conduit. In such a case it is rather unfair that the drain, which is really for the private advantage of two or three houses, should be repairable by the local authority. The want of a similar proviso in the Public Health Act 1875 has long been felt, and it was, no doubt, to remedy this deficiency that section 19 was inserted in the Amendment Act of 1890. The material parts of this section are as follows:—

Where two or more houses, belonging to different owners, are connected with a public sewer by a single private drain, an application may be made under section 41 of the Public Health Act 1875 (relating to complaints as to nuisances from drains), and the local authority may recover any expenses incurred by them in executing any works under the powers conferred on them by that section from the owners of the houses. . . . For the purposes of this section, the expression drain includes a drain used for the drainage of more than one building.

Now, the first point which strikes one about this section is that the houses must belong to different owners. One would have thought it would be an *a fortiori* case that, if the conduit carried the sewage of houses belonging to the same owner, it should not be regarded as a sewer so as to be repairable by the local authority. In the second place, we may ask what is meant by a single private drain or a public sewer, seeing that prior to 1890 no meaning had ever been attached to these expressions, and that they are not defined by this Act.



Cave, J., in *Hill v. Hair*, 1895, 1 Q.B. 911, suggested that this enactment was intended to meet the case of a drain for two or more buildings within the same curtilage. If this be the right explanation, the section is absolutely a dead letter, since it only re-enacts what was already the law. On the other hand, if "private" drain means a drain running through private land, it would include main sewers, which in many large towns are laid under private houses or buildings. The true interpretation of the section seems to be that by "public sewers" the Legislature referred to the main sewers as contrasted with those sewers which are merely connecting conduits between groups or blocks of houses and the main sewer. Such a connecting conduit is here described as a single private drain. This was the interpretation put upon the section by Wills, J., in *Self v. Hove Commissioners*, 1895, 1 Q.B. 689; but until the Act of 1890 has been interpreted by the Court of Appeal, it is impossible to feel any certainty on the point. In the meantime local authorities may evade the difficulty by compelling the owners of houses to provide *separate* drains from each house into the main sewer. This they have power to do under section 21 of the Public Health Act 1875.

Within the metropolitan area the distinction between drains and sewers is determined by the Metropolis Management Acts, and not by the Public Health Acts. The definition of a drain contained in the Metropolis Management Act 1855, which has been set out above, does not seem in every respect satisfactory. It will be observed that in order to come within that definition the drainage system of a group of houses must be executed *under the order of a Vestry or District Board*. Consequently, when a London builder constructs a conduit which drains two or more houses, either without the sanction of the Board or contrary to their directions, the conduit becomes a sewer, and the Board is saddled with the liability of keeping it in repair (see *Kershaw v. Taylor*, 1895, 2 Q.B. 271). The builder who thus disobeys the directions of the Board is liable under section 83 of the Act to a penalty of £10. This penalty is too small to be an adequate remedy, and, moreover, by the time the builder's misconduct has been discovered he is in many cases protected by the Statute of Limitations, or is not to be found. Whether, in the absence of evidence to the contrary, a conduit which drains a group of houses will be presumed to have been constructed under the order of a Vestry or District Board, so as to be a drain and not a sewer, is a point which has not as yet been decided.

#### The Science Standing Committee : Experimental Research.

In connection with the Fund for Experimental Research the following report was presented to

the Science Standing Committee on Thursday, the 10th October :—

The Sub-Committee on Brickwork have to report that the experimental piers are now built, and that the first period of three months before testing will shortly elapse.

The site for testing is a piece of vacant ground immediately in front of the Engineer's Office at the West India Docks. The testing machine is to be placed in the centre of a temporary line of rails, upon which the experimental piers are built.

The rails are provided by the Dock Company, and laid upon sleepers bought of Messrs. Burt, Boulton & Haywood. The laying of the rails and ballasting was done by the Dock Company, as also the excavation necessary for the testing machine.

The bricks, lime, and sand are bought of Messrs. Cliff & Sons, and are the ordinary mercantile articles such as would be supplied to any builder. The Portland cement has been kindly given by Messrs. J. Bazley White & Brothers, Limited, and is of ordinary fine ground quality. Samples of the bricks have been tested by Professor Unwin.

The labour for building the piers was supplied by Messrs. Dove Brothers, and the piers were commenced on the 24th July and finished on the 13th August. The building was executed under the inspection and superintendence of Max Clarke, Francis Hooper, and William C. Street, members of the Science Committee, and a record of progress was kept so that the age of each pier at the time of testing can be ascertained. The piers on one side of the testing machine are in cement mortar, and those on the other side in lime mortar.

Sir William Arrol's firm have just finished the hydraulic testing machine. It is now on its way to the docks, where it will be erected immediately on arrival.

Professor Unwin, F.R.S., Vice-Chairman of the Committee, has kindly undertaken to test the machine previous to its use, to ascertain the coefficient for friction, so that the pressures may be registered as correctly as possible.

It is proposed to commence the tests of the first set of piers about the end of the present month, and due notice will be sent to the members of the Science Committee, so that they may be present should they so desire.

(Signed) WILLIAM C. STREET } Reporters.  
MAX CLARKE

8th October 1895.

It is hoped that those of the members of the Institute who have not yet contributed to the Experimental Research Fund will send in their names to The Secretary R.I.B.A. with the amount of their subscriptions. The money already subscribed is now nearly all expended, and more is

needed to defray the further cost of these experiments.

**The Works of the Roman Marble Masons from the Twelfth to the Fourteenth Century.**

From JOHN HEBB [F.]—

Among the most important monuments of the Middle Ages are the churches, pulpits, monstresses, episcopal thrones, rearedoses, tombs, &c., of the Cosmateschi, so called from the name of a member of one of the principal families of marble-masons in the thirteenth century. These works, which are mostly of Grecian marble, with inlays of red porphyry, or green serpentine enriched with mosaics, with gold tessere and azure and scarlet enamel, have engaged the attention of numerous archaeologists and artists, commencing with Promis and terminating with Gregorovius, Camillo Boito, G. B. de' Rossi, Stevenson, Marucchi, Frothingham, and Giacomo Boni.

With a view to the further study of these interesting remains, Signor Romualdo Moscioni, an eminent Roman photographer, has published a series of photographic illustrations of all the works of this description in the Romagna, the Abruzzi, Umbria, and the Campania, which will enable the student to compare them with the Arabian-Norman decoration of Ziza in the Capella Palatina, and the tomb of King Roger at Palermo, as well as the monuments of Monreale and Cephalonia, to which they have a strong artistic resemblance. It is also possible to compare them with the tomb of the daughter of Henry III. and the Shrine of Edward the Confessor (which bears the signature of a certain *Petrus romanus civis*, and the date 1279), as well as the tomb erected in 1281 to the memory of Henry III. in Westminster Abbey, and the pavement of *opus alexandrinum* in the same cathedral and at Canterbury, which show the influence of the grand school of Roman marble-masons which became dispersed and extinguished during the dark ages of the papal exile at Avignon.

In the genealogy of the principal families of marble-masons as now recognised, the oldest had at its head one Paolo, who in the early part of the thirteenth century executed the pyx or ciborium in the cathedral of Ferentino, and the mosaic pavement in the choir of the old basilica of St. Peter at Rome. The sons of Paolo the mason were Giovanni, Angelo, Pietro, and Sassone, who carried out the ciborium in the basilica of San Lorenzo fuori le Mura, and in the year 1154 the ciborium of San Marco and of Santa Croce in Gerusalemme, both of which are lost. Angelo had a son named Nicholas, who, towards the end of the twelfth century, in conjunction with a certain Vassalletto, executed the famous Paschal candlestick in the basilica of San Paolo fuori le Mura.

Another family of masons was named Ranieri or Ranucio, who designed the two-light window

in the convent of San Silvestro in Capite, and whose sons Pietro and Nicollò worked on the doorway and the two-light window adorned with porphyry mosaic in the old cathedral of Santa Maria di Castello at Corneto (Tarquinii). Nicollò had two sons, Giovanni and Guido, who in 1168 carved the ciborium in the same building at Corneto, where a son of Guido, named Giovanni, like his uncle, executed, in 1209, the beautiful marble pulpit adorned with gold mosaic and multi-coloured enamel, which still exists.

Pietro Vassalletto designed, with the son of Vassalletto, the Lateran cloister which may take a place beside the cloister of St. Paul and the abbey, near Foligno, which last was erected in 1229 by a certain *Magister Petrus de Maria, romano opere et mastria*. Another Vassalletto, in 1293, carved the bishop's throne at Sant' Andrea di Anagni, and another member of the family put his name to the mason's work at Sant' Apollinare, which is now in the studio of the painter Villegas, beyond the Porta Salaria.

But the greatest of all was the family of Lorenzo, the mason who, with his son Giacomo, erected in the twelfth century the front of the cathedral of Civita Castellana, the church of Santa Maria di Falleri, and the magnificent pulpit in the church of the Ara-coeli. Giacomo had a son named Cosma, from whose name is derived the term *cosmatesche*, or *cosmati*, which is commonly applied to the works of the Roman masons. Giacomo and his son Cosma erected the porch in front of the cathedral of Civita Castellana in 1210, and in 1218 the front of the church of San Tomasso in Formis, of the Order of the Trinitari. Cosma executed in 1224 the pavement of the cathedral of Anagni, and, with his sons Giacomo and Luca, the crypt of San Magno in the same city, and in 1231 the cloister of Santa Scolastica at Subiaco. A second Cosma built in 1277 the chapel of the Scala Santa at San Giovanni in Fonte, and his son Deodato carved in 1294 the ciborium at Santa Maria in Cosmedin, and later a fine pointed arched ciborium, of which there are remains in the cloister of the Lateran.

Among the works of Giovanni di Cosma still remaining at Rome are the tomb of Bishop Durand in the church of the Minerva (1296), the tomb of Cardinal Gonsalvo at Santa Maria Maggiore (1299), the tomb of Stefano de' Surdi, chaplain to Boniface VIII. (about 1303), and others.

"Architecture for the Public" [Vol. II. pp. 633, 670].

From H. HEATHCOTE STATHAM [F.]—

I think the difference between Professor Baldwin Brown and myself arises partly from the fact that we are using the words "evidence" and "knowledge" in rather different senses. When I wrote that we had no evidence of the existence of any wooden Doric columns, except a single remark of Pausanias as to having seen one such column,



I used the word "evidence" in what seems to me the correct meaning of the word—viz. testimony by someone as to something he has himself seen. I do not know why Professor Brown should have assumed that I was not acquainted with the find of the various types of Doric capital at the Heraion, and with Bötticher's deductions therefrom; I have, in fact, referred to the point in *Architecture for General Readers*, and mentioned the theory propounded by Bötticher as a probable explanation of the circumstances; an expression which I have modified for the second edition of the book, as I think, on consideration, that it goes too far. The theory which explains the existence of so many rather oddly assorted forms of Doric capital by the supposition that stone columns were inserted from time to time as the original wooden ones decayed is no doubt ingenious; but it is only an opinion, and cannot be termed "evidence." It is true, as a friend whose Greek is better preserved than my own has reminded me, that in Pausanias's sentence, "ἐν δὲ τῷ ὀπίσθῳ δρυὶς ὁ ἕτερος τῶν κίωνων ἐστὶ," ἕτερος with the article before it is always taken to mean "one of two things"—"one of the two columns in the opisthodomus is of oak"; and this seems no doubt to imply that two columns which one would have expected to find identical in material were not so. But, on the one hand, in the trenchant brevity of Pausanias it is difficult to be sure that we know exactly what his point was; and, on the other hand, it should certainly be remembered that the employment of columns of Doric, or any other Order, in the same temple, of totally different design, is foreign to all our experience and knowledge of the habit of Greek architects; that if it were so in this case, it must have been a most unusual thing to the eyes of Pausanias; and that if he took the trouble to mention that one column was of oak, he would surely also, since his attention was directed to the columns, have taken the trouble to mention so singular a fact as that the capitals were all different. It could hardly have escaped his notice.

I conclude, therefore, that the theory that stone columns, each of a different design, were one by one substituted for wooden ones in the Heraion as the latter decayed, although constituting a very ingenious comment on the statement of Pausanias, is a pure assumption, and assumes something so contrary to our general knowledge of Greek architecture that it can only be accepted as a theory with the greatest hesitation; as a conclusion resting only on conjecture, and inherently improbable. And even supposing it proved that the Heraion had a wooden colonnade originally, that would be no proof that the Doric column was originally a wooden feature; it would merely be the proof that the columns of that particular temple had, perhaps for some local or temporary reason, been made of wood; there would be nothing to show

that they were not themselves copies of stone ones. Then we are always confronted with the unquestionable fact that the oldest examples of marble or stone Doric columns are thicker and more bulky in proportion than those of the great period of Greek art. There is an exception in the order of one of the Selinonte temples, which shows a tall-proportioned column with a most unusual amount of diminution; but in general the tendency certainly is to thicker proportions as we go backward in time—a fact which is quite at variance with the probabilities of a wooden origin. There are probably no means of dating the Corinth temple now, but I think it is generally agreed that it is probably one of the oldest Doric remnants in existence, and I cannot imagine anything more unlike a wooden origin than the appearance and proportion of those columns.

As to the origin of mouldings, I think that to say we *know* that the roll moulding beneath the Egyptian cornice and up the angles of the pylons was originally a wooden rod is again going too far. But supposing we admit that it is after all a peculiar form, standing almost alone; it does not in any way explain the contours of the Greek mouldings the origin of which I take to be purely æsthetic, and which are specially suitable for the material in which they were executed, as the very different contours of the Gothic mouldings are specially suitable for their material. We certainly have not the *origines* of the Greek mouldings in any wooden form, and whatever we may think as to the timber origin of the Doric entablature in its general aspect, I do not think the mouldings, in detail, suggest a wooden origin in the least, any more than those of Gothic architecture; nor can I see that it is in the least necessary to seek for any such origin. As soon as you chamfer off the sharp edge of a stone angle—an operation almost suggested by the practical desire to remove a sharp angle which is liable to chip—you get the first suggestion of moulding; from that to shaping the contour of the chamfer in a convex or concave form, for greater refinement of effect, is an easy and natural step; and, so far from being "un-stonelike," it is a treatment peculiarly suitable to stone, as I think every architect would feel.

#### Memorial to the late Heber Rimmer.

The friends of the late Heber Rimmer, the Institute Silver Medallist (drawings) 1891 and the Soane Medallist 1892, whose premature death occurred at Gibraltar a few months ago, are desirous of publishing, as a memorial, a small volume of his sketches with portrait, for private circulation. The number of illustrations will depend upon the amount of subscriptions promised, but it is hoped to give at least thirty plates. The price of the book will be 10s. 6d. Intending subscribers should at once communicate with Mr. Edward Hodgkinson, 35, Pepper Street, Chester.





## MINUTES. I.

At the First General Meeting (Ordinary) of the Session 1895-96, held Monday, 4th November 1895, at 8 p.m., Mr. F. C. Penrose, F.R.S., *President*, in the Chair, with 26 Fellows (including 9 members of the Council), 27 Associates, 1 Hon. Associate, and several visitors, the Minutes of the Meeting held 8th July 1895 [Vol. II. p. 596] were taken as read, and signed as correct.\*

The following candidates for membership, found by the Council to be eligible and qualified according to the Charter and By-laws, and admitted by them to candidature, were recommended for election, namely:—As FELLOWS, Harry William Roberts (Leicester); Charles Thomas Miles (Bournemouth); George Hubbard [A.] (*Qualified as Associate* 1894); Herbert Osborn Cresswell [A.] (*Qualified as Associate* 1886); Herbert Huntly-Gordon [A.] (*Qualified as Associate* 1888). As ASSOCIATES, Frederick William Petter (*Qualified* 1895) (Barnstaple); Charles Kay Mayor (*Qualified* 1895) (Manchester); Cecil Alexander Sharp (*Qualified* 1895); Herbert Story (*Qualified* 1895) (Birkenhead); William Hawke (*Qualified* 1894); Edward Greenop (*Qualified* 1895); Francis Edward Morris (*Qualified* 1895) (Reading); Percy Leeds (*Probationer* 1892, *Qualified* 1895); George Gilbert Irvine (*Qualified* 1894); Harry Hutt (*Qualified* 1895) (Reading); Harry Garnham Watkins (*Probationer* 1891, *Student* 1893, *Qualified* 1895) (Lincoln); Robert Saxton Besant (*Qualified* 1895); Alfred John Dunn (*Qualified* 1895, *Pugin Student* 1895) (Birmingham); James Alfred Ernest Lofthouse (*Qualified* 1895) (Middlesbrough); George Cowan (*Qualified* 1895) (Southsea); George John Thrift Reavell (*Qualified* 1895); William Charles Waymouth (*Probationer* 1889, *Student* 1891, *Arthur Cates A.L. Scholar* 1892, *Qualified* 1895); Christopher Mitchell Shiner (*Qualified* 1895); Frank Brookhouse Dunkerley (*Probationer* 1889, *Student* 1892, *Qualified* 1894) (Manchester); Stanley William Worth Delves (*Probationer* 1890, *Student* 1893, *Qualified* 1895) (Tunbridge Wells); Edward George Collins (*Qualified* 1895); Edward Penfold (*Qualified* 1895) (Reigate); Orlando Middleton (*Probationer* 1890, *Student* 1891, *Qualified* 1895) (Cheltenham); Robert Messenger (*Qualified* 1895); James Hewitson Shaw (*Qualified* 1895). As HON. FELLOWS, Edward Falkener (St. Clears); Sir Frederic Leighton [H.L.], Bart., P.R.A. (*Royal Gold Medalist* 1894). As HON. CORR. MEMBERS, Professor Victor Schröter (St. Petersburg); Hermann Josef Stübßen (Cologne); Friedrich Carl Heimann (Cologne).

The Opening Address of the Session having been delivered by the President, a vote of thanks, moved by Mr. Aston Webb, F.S.A., *Vice-President*, and seconded by Mr. W. D. Caröe [F.], M.A., F.S.A., was passed to him by acclamation, and briefly acknowledged.

\* Mr. Lewis P. Crace [A.], writing on the 4th November to the Secretary R.I.B.A., states that several members, himself included, "voted unmistakably against" the amendment carried as a resolution at the close of the Special General Meeting of the 8th July; and that the amendment was erroneously described in the report as "carried unanimously." Had this been observed the statement on the last line of the report of that Meeting [Vol. II. p. 601], to the effect that the resolution was carried unanimously, would not have been printed; or the error would have been at once corrected had Mr. Lewis P. Crace notified it at the time. The Minutes [Vol. II. p. 596], however, were and are correct.

The proceedings having been thus brought to a close, the Meeting separated at 9.45 p.m.

## PROCEEDINGS OF ALLIED SOCIETIES.

## THE MANCHESTER SOCIETY.

Extracts from the Opening Address of the Session.  
By John Holden [F.], President.

Delivered 11th October 1895.

The classes in architecture, which were specially arranged between the Committee of the Technical School and the Council of this Society, have not, I find, been attended as satisfactorily as I could wish. These classes cannot fail to be of great use to the students, especially to those who desire to take any position in the profession and to pass the examination necessary for that purpose; and while I do not advocate the system of cramming, which is bad in principle, still it is greatly to the advantage of the student that his energies should be directed into a proper channel, instead of being wasted on matters of comparatively little importance.

It would, I am sure, be a matter of regret to most of us if, from a want of proper support, these classes should be discontinued; and we must remember that there are so many subjects now thoroughly taught in the Technical School and its branches, and the classes are so largely attended as a rule, that it is hardly likely the Committee of Management will continue to deal with a subject specially for a few students only. As to the value of the instruction to be obtained at these schools, I think there can hardly be a doubt. We must remember that teaching is as much an art as architecture itself, and a person requires to be trained to it just as much as to any other profession. It is not every professional or business man who can satisfactorily impart a knowledge of his particular branch to a student, although he may be a master of his craft. This I have particularly noticed for many years, and I think you yourselves, if you will consider the subject, will agree with me.

At the same time I wish you not to misunderstand me, and to suppose that the Technical Schools, or any other similar establishment, can by themselves make either an architect or any other business man; this would be a mistake. These schools are a most valuable adjunct to all businesses which are taught in them, and the student will receive instruction in the theoretical and practical branches of his own particular craft which he cannot obtain at his employer's office or works. And it is the interest of the teachers to impart this knowledge to him.

The principals or employers nowadays are busy men, and have neither the time nor (in many cases) the inclination to sit down alongside a student and instruct him. Generally the youth is passed into the office or works, introduced to the notice of the chief clerk or foreman, and left in his charge and expected to make himself useful. He must then depend upon himself. If he pushes his way he may get instruction and assistance; if not, he simply works out his time. In any event he obtains simply a knowledge of the business as carried on in that particular office or establishment—and we all know that no two offices are alike. All professions and businesses are divided into specialities, and none more so than our profession. It is, therefore, important that the student should, in addition to his ordinary office routine, pass part of his time in another place, where he will receive that instruction which he cannot obtain amidst the worry and bustle of a business establishment.

I speak strongly on this subject, as I wish not only the students but the older members to remember it, and to allow to their pupils the time to enable them to attend

these classes. I know that in a busy establishment there are times when all hands are required, but I ask you, the seniors, to discriminate between your pupils and your employés. Remember that the pupil comes to you for a certain purpose, and often, in fact generally, pays a large premium, and is therefore entitled to consideration—you are therefore under moral, and generally also legal, covenants to teach him his business as such is carried on in your establishment, and you are to a certain extent responsible for his future. This is an entirely different position from your relations with your employés or clerks, who are engaged to do your work, and to whom you are under no obligation as to teaching. I ask you, therefore, not only to allow your pupils the necessary time to attend the classes provided for them, but also to see that they do attend—in fact, to exercise that control and supervision over them which you would do over your own sons.

I confess that I should like to see more of our Manchester students entering themselves for the Royal Institute Examinations. There must be a very large number of pupils in the different offices in the city and suburbs, even those represented by this Society; yet very few put in an appearance. The Examinations have been brought to Manchester now many times, not without trouble, and have been conducted here at a very considerable expenditure of time on the part of a comparatively few members, yet I notice that very few of our Manchester students take advantage of them. If you examine the attendances at the Preliminary Examination—one in each year—you get the following figures:

1893. Nov. ...	9 candidates—None from Manchester			
1894. March...16	" —3	"	"	all passed
1895. March...25	" —2	"	"	none passed

So that out of fifty students attending these Examinations only five were from the principal city, and but three passed. And I particularly notice that many of the smaller towns send up two or three students to each Examination, while a large and important city like Manchester, with its several hundred practising architects, can only provide three candidates at the most. There is surely something wrong here, and it is for us to find out the reason and rectify it.

In the Qualifying Examinations I find the same conditions existing, the proportion rather better, but the numbers small and the result poor. Taking the same three years the result is as follows:—

1893 ...	8 candidates attended—4 from Manchester—1 passed.
1894 ...	8 candidates attended—2 from Manchester—1 passed.
1895 ...	5 candidates attended—1 " (relegated)—1 passed.

These results cannot be satisfactory, and I must confess I do not understand it.

Another matter which has exercised my mind has been the use of the Library. The Library is not, of course, as yet a very large one, although it is increasing; still, it even now contains a considerable number of the best standard works; practically it contains all that is required for an ordinary student in architecture who wishes to pass the Examination. The register shows, however, that nothing like the use is made of it that the character of the books deserves.

Now, a word or two about the prizes given by the Society. I note that the small 10s. and 5s. prizes, which entail comparatively little labour or study on the part of the student, are taken up, but the larger prizes are either not competed for, or the responses are poor and unworthy of the sum to be awarded. One prize of £5. 5s. has not been awarded since 1891. The larger prizes, which are given on the recommendation of the Technical School Committee, I am pleased to say, remain this year in Manchester, and I have every reason to believe have been well earned.

This question of education is a serious one as affecting the profession, and also the Society, and I confess that I cannot understand it. I should be glad of any information which would assist the Council in dealing with it, and I invite communications from the students and others on the subject which may explain in any way the great lassitude and indifference which seem to run through the body of students. I am sure that the Council will carefully consider any such communications and, if possible, meet the difficulty and remedy the defects.

For some years past I have noticed the gradual decadence, I may say, of the study of Classic Architecture among the students; the more catching and sensational styles have been adopted and brought to the front. This is, I venture to think, a mistake on the students' part, as a thorough grounding in the principles of classic work is of the greatest use, and enables the student more easily to adopt other styles, which come up for a short time, and then, as it were, pass away. Understand, I do not complain of the use of these sensational productions, but I consider that they are not suitable as a basis for the education of the student. No doubt they suit the present taste of the public; but the impression is not lasting, and, to my mind, there is a want of boldness which detracts from the dignity of the building. The use of large quantities of surface ornament in low relief, and of small and thin mouldings, attracts attention to parts of the building, but not to the building as a whole.

This Society has for many years offered a prize for some subject in connection with Classic Architecture, but of late years the response has not been at all satisfactory, and for the last three years the prize has not been awarded. I hope that it will be responded to this year in a more satisfactory manner. I feel bound, however, to say here that I do not personally agree with the withholding of a prize when there is any response to it. When it is once offered I consider that it belongs to the students, and that it should be awarded (unless, of course, the response is a burlesque). The work of a student should not be criticised in the same manner, or with the same strictness, as that of a body of experts in a competition for a building. The object of giving prizes for competition by students is to encourage them to read and work in their own time, and to obtain information which will be useful to them afterwards, and to withhold the prize disheartens the student and possibly prevents him from trying a second time. I do not know of anything which would sooner discourage a youth who has done his best in tackling a subject of which others have fought shy than to be simply told that his production was not of sufficient merit. Strictly speaking, I am well aware that the work produced by most of the students is not in a commercial sense worth the amount of the prize, but that is not, in my opinion, the question. The prizes are offered for the purpose of encouraging the youths to study and to work in their own time, by which means they will gain knowledge and experience, and will also, by contact with others, gauge their own abilities; and personally, if I can induce the student to read and think, and to place his thoughts on paper, I should feel that the money had not been wasted. Every care should be taken not to discourage a student at the commencement of his career, and I hope that those who have to examine the productions of the students during the coming session will bear this in mind.

There is one other matter to which I wish to refer shortly, viz. the question of competitions. Unfortunately this seems to be a standing complaint which comes before us each year, with its record of improper conditions imposed by committees, unjust decisions, and consequently time and money wasted in preparing drawings, and the remedy seems to be as far off as ever. Certainly, when I read some of the conditions now imposed, it is a matter of surprise to me that architects



will compete. Amongst the conditions we find such as these :—

That the Committee does not bind itself to employ any of the competing Architects to carry out the work.

That the whole of the premiated drawings (however small the premiums may be) shall become the absolute property of the Committee.

Then the accommodation required is given (generally much in excess of what may reasonably be expected for the amount proposed to be expended), and the amount to be expended also fixed. The result of the last condition very often is, that the architect is landed in a difficulty when he endeavours to obtain tenders, and the work passes into the hands of some other person at the option of the committee.

So far as the work is concerned the professional assessors are at times ignored, the committee not being under any obligation to carry out their selection. The premium may be paid in accordance with their award, but the work goes to someone else who may have friends on the board. This course acts very hardly on the striving architect who may have endeavoured faithfully to conform to the instructions. The carrying out of the work is, of course, the real object of the competitor so far as he is concerned, as the premium in all probability will only about pay costs out of pocket, and sometimes not even that.

The question is a very difficult one to deal with, especially so long as architects of position can be found ready and willing to enter into competitions on almost any terms. If leading architects would refuse to compete excepting on fair and proper conditions there might be some chance of obtaining better conditions; but until this is done, I really cannot see any way out of the difficulty.

### Hygienic Ventilation. By John Le Marchant Bishop.

Read before the Manchester Society of Architects, December 1855.

The ventilation of enclosed places of assembly is, as yet, both in theory and in practice, a thing of immature development, at least in this country. In *theory* it is commonly assumed to consist simply in the removal of floating impurities, by the ingress of fresh air currents, in such a manner as to protect the persons assembled from the draughts caused by those currents. This view of the case prevails extensively, not amongst the general public merely, but also amongst those whose professional or business education and experience should be expected to ensure a sound and mature acquaintance with this subject. In *practice* this protection from draughts is usually effected by the diversion of the currents from that part of the room occupied by the persons assembled. That both the theory and the practice, as stated, result from narrow and partial views of the subject it will not be difficult to show. As to the necessity for the removal of the floating impurities by the ingress of fresh air currents there can be no question. It is, or should be, the primary object of ventilation everywhere, under all conditions, whatever the methods employed.

Scarcely less important is the protection of the persons assembled from cold draughts caused by those currents, especially to those who, whether from coddling or enervating habits, ill health, constitutional debility, infirm old age, or other causes, have but feeble resisting power, and are morbidly sensitive to climatic and atmospheric changes. These points are so obvious as to preclude discussion. But here the truth, or at least the obvious truth, of the assumption ends, as I shall hope to show in the following brief critique on the theory and practice in question.

#### I. THE THEORY OF VENTILATION.

It cannot be too distinctly borne in mind that true ventilation is purely and simply an hygienic matter, in which

mere trade interests in, or mechanical exigencies of, particular schemes or devices, or even architectural mandates, can have no consideration, except and in so far as they conform to the laws and subserve the objects of practical hygiene. The real question to be considered here is, By what mechanical arrangements may the best and completest protection be ensured to the health from the disadvantages and risks incident to the assemblage of numbers of persons within a restricted enclosed area? This proposition is direct, intelligible, and exhaustive, and, as against it, all mere questions as to the natural or the mechanical principle, the upward or the downward method, the expulsion or the indraught process, and the like, become subordinate, and, so far from embodying hard-and-fast principles of arrangement to the exclusion of others, may be mere questions of detail. Either may be right and useful in its own way and for special purposes; conversely, either may be wrong in other cases and for other purposes. Trade cant and claptrap are surely out of place here. The primary consideration, kept steadily in view, should suffice to determine, in any particular case, which of those arrangements or methods, or what combinations of them, would best subserve the practical end.

Upon hygienic principles the first desideratum in the usual methods of ventilation is, that pure fresh air be brought freely and directly in contact with the persons assembled, instead of being diverted from them. Surely this is too manifest to need urging. To divert the fresh air away from those for whose express and exclusive benefit it is admitted, often at considerable cost, is a procedure that for inconsistency could scarcely be surpassed; and it is self-evident that, if this be the only possible method of affording protection from draughts, then true hygienic ventilation is an impracticable and impossible achievement.

Another essential condition of ventilation on hygienic principles, not less manifest than the last named, yet as commonly overlooked, is that such ventilation be *continuous* as well as thorough, no less when the room is unoccupied than when occupied. While it is true that the atmosphere of a room becomes much more rapidly vitiated when people are assembled in it than at other times, it is not less true that, upon any system of ventilation whatever, only a portion of the impurities thrown into the room is carried away, and that that which remains is the most pernicious of the whole. The organic particles given off from the lungs, however trivial in the case of a single individual, become a very serious aggregate amongst a crowd of persons shut up for hours in a room inadequately or imperfectly ventilated. Such of them as get into the sweep of the currents passing through the room are, of course, carried away, or most of them; but the rest remain floating about those parts of the room out of reach of the currents, until, coming in contact with the walls, ceiling, furniture, and other exposed objects, the highly viscous surfaces of those particles fix them immovably thereto, to decompose and putrefy at leisure. Now, considering that this accumulation is constant; that the particles, highly poisonous when first given off from the body, become more so as putrefaction advances; that those from persons suffering from communicable diseases contain the germs of such diseases; and that only a continuous and adequate supply of fresh oxygen can effectually destroy this ever-increasing and perilous mass of corruption, the insanitary condition of such rooms may be more easily accounted for than adequately realised. The sickening odours of their atmosphere, especially those which have been long in use, when shut up from the action of fresh air currents arise, not from the presence merely of carbon dioxide, but from the vile exhalations of an unceasing accumulation of putrid matter.

Nothing, then, can be more manifest than that any system of ventilation established upon true hygienic lines



must embody an arrangement for a practically continuous and adequate supply of fresh air to the room *at all times*, so that every inch of the air space, and every accessible object within it, may be constantly subjected to the chemical action of the fresh oxygen contained therein, by which alone the organic matters, whether floating or fixed, can be quickly removed, or reduced to innocuous forms. How is this to be done? For answer we must consider the subject from its practical side.

## II. THE PRACTICE OF VENTILATION.

We have already observed that upon ordinary methods of ventilation immunity from draughts is usually sought in the diversion of the currents away from the persons assembled—*i.e.* by directing them *above their heads*—the objection to which is that that part of the room most in need of careful and direct ventilation, the part occupied by the assembly, is left unventilated, in the only true sense of the term.

It is usual to urge, in defence of this procedure, that the exhalations from the body “naturally ascend,” and are therefore caught up by the overhead currents and carried away. This, however, is but partly true, and does not meet the point. Not to mention the fact that a stream of air passing through an occupied room is necessarily of much smaller dimensions than the air space of such room, and, therefore, that many of the exhalations may pass freely about the room without coming within the sweep of the current, the notion is founded upon an error in pneumatics, being directly at variance with the laws of the expansion and diffusion of gases, in virtue of which all gases, whether light or heavy, when not distracted by other and superior forces, tend, not to ascend merely, but to spread themselves equally in all directions and to intermingle with one another. Thus, a cubic foot of air passed into a large exhausted chamber would not ascend merely, nor retain its one-foot volume, but would expand in every direction and occupy every part of the air space in the chamber. Further, if a foot of gas, say carbon dioxide, were then also passed into the chamber, this would no longer retain its volume of one foot, but would, although heavier than the air, also expand in all directions, intermingling freely with the air, and in conjunction with it occupying all parts of the air space of the chamber.

Gases, however, in common with all material things, are subject to the force of gravity. Hence it is true that a stream of warm air passed into a cooler atmosphere, or medium, *will ascend*, not because it is warm, but because, being rarefied by heat, its specific gravity is less than that of the medium, the superior weight and density of which force the warm air upward. As soon as its specific gravity is increased by the exhaustion of its heat to that of the medium, however, the law of diffusion, partially suspended by the heat of the stream, will reassert itself, and a general expansion and diffusion will take place. Hence it follows that warm gases passed into a cooler medium will ascend with a degree of energy proportionate to the difference between the two temperatures; so that, if the gas be only slightly warmer than the medium, their specific gravities being nearly equal, its ascent will be proportionately feeble and restricted. The importance of this fact in relation to the practice of heating rooms, or supplying them with heated air, in its bearing upon the present question will be apparent. In proportion to the warmth of the general atmosphere of the room, the exhalations, which, at the same temperature, are generally heavier than pure air, will be subject to the laws both of diffusion and of gravity, and, so far from ascending, will intermingle with the medium with a general *downward* tendency.

There is another common error in practical ventilation, founded on a curious oversight, yet generally accepted as sound doctrine, both by professional men and the public. A current of air passed through a room until its entire

volume would, if collected and retained within the room, suffice to fill the air space of the room is held to have “changed the atmosphere,” *i.e.* to have turned out the whole of the atmosphere and taken its place; whereas by far the greater part of the current entering by the inlet has escaped through the outlets, and, so far from “changing” the air of the room, has, in many cases, failed even to reach the greater portion of it. It is solely upon the authority of this extraordinary assumption that ventilating engineers and firms claim, by the aid of their mechanical appliances, some of them of the loosest and most inadequate description, to “change ‘the air of a room’” a given number of times an hour. As a matter of fact, the first and chief effect of the passage of a stream of air through a room, as stated, would be, if colder than the medium, or if passed under pressure, whether cold or warm, to displace the air in that portion of the air space through which it travelled, but not to replace the air generally, since the stream is constantly passing outward, forcing its way *through* the medium towards the outlet. It would, of course, carry with it some portion of the air within its sweep, and more or less agitate the remainder. But partial displacement is a widely different thing from general replacement, as is agitation from purification; and the complete mechanical changing or replacement of the air of a room, if at all practicable by such means, is necessarily a much slower and more difficult process, especially in an occupied room, than is generally supposed. Such a claim seems to wholly ignore the very wide distinction between the physical conditions of a room already filled with air and those of an exhausted chamber.

The elementary physical facts above stated, if generally known, are strangely lost sight of in their application to ventilation, and in much of the trade literature on the subject are systematically kept in the background, or suppressed altogether. They show plainly enough, however, the erroneousness of the notion that a crowded room may be ventilated, even with a moderate degree of success, by means of overhead currents, or that a room used for any purposes of assembly may be kept pure and healthy without a continuous, adequate, and general distribution of fresh air. Hence I repeat that *true hygienic ventilation of such rooms is impossible without a free, direct, and practically continuous circulation of pure fresh air through all parts of the air space.*

But is such ventilation practicable? I submit that it is, though only in one way—namely, by the combined processes of diffusion and distribution. Both the diffusion and the distribution must, however, be complete and thorough. It is one thing, a very simple thing, to diffuse the air currents; it is quite a different matter to distribute the fresh air uniformly, completely, and continuously in a diffused form through all parts of the air space. Obviously this can only be effected by means of a very carefully devised arrangement of suitably constructed inlets and outlets. No rule-of-thumb or haphazard venture will achieve it. The outlets must bear a definite relation to the inlets in point of numbers, areas, and situation, and both inlets and outlets to the plan and dimensions of the room, and those in operation to the numbers of persons assembled; in short, to the work required to be done. Further, both the inlets and the outlets must be carefully guarded with suitable valves, otherwise much of the air will be diverted and wasted, and much of the work rendered futile by leakage. In a word, it is only by dint of very careful and judicious mechanical arrangements that the air currents could be both diffused and distributed in a manner to constitute what alone could properly be designated true hygienic ventilation.

Such an arrangement, then, would embrace a number of inlets placed at frequent and, as nearly as possible, equal intervals around the walls and about the pillars, &c., of

the room, disposed so as to direct the currents toward a central but extended area of the roof or ceiling, so as to gently sweep, instead of directly striking it. If all means of outlet in the upper parts were stopped, and of inlet other than those prescribed, the currents, intermingling about the ceiling, would gradually become diffused as they descended, and the further they descended, in the absence of outlets, the more complete would the diffusion become.

If, then, a like number of outlets, of suitable areas, were similarly arranged about the floor-line, the whole of the air must descend to the floor to find its exit. Thus the distribution as well as the diffusion would be mechanically complete, and the exhalations, participating in the general downward sweep, would be immediately carried away through the outlets, instead of rising into the body of the atmosphere. The diffused air would thus be brought freely about the occupants until, on approaching the floor, it resumed its current form, passing outwards unfelt, or felt only as warm currents at the lower extremities; since the air on leaving the room would generally be warmer than on entering it. No draughts would then be possible, a draught being but a current of air sufficiently cool or rapid to unduly extract the heat of the body or part of the body of the person attacked thereby. I can conceive no other principle of mechanical arrangement upon which true hygienic ventilation is possible, nor upon which the air of a room may be safely and surely "changed" with the uniformity, rapidity, and completeness necessary for dealing immediately and effectually with the ever-accumulating impurities of a crowded room.

For purifying and conditioning the air it must, of course, be passed through a central chamber; while, for the more complete control and regulation of its supply and distribution, a perforated shutter, or other convenient form of stop, might be fixed to each outlet and, where desirable, to the several distributing tubes. The outlets should in no case communicate directly with the open, but should be connected with a suitable exhaust carried directly to the top of the building, so as to discharge itself well above the roof.

In view of the necessity for a continuous supply of fresh air to places of assembly, the question of cost would seem to assume considerable practical importance, and to constitute, in many cases, a serious difficulty. This, however, would generally be found to be more apparent than real. In hospitals, workhouses, and the like, where, upon *any* system, power would be constantly needed, its cost would of course be inevitable. But in the case of places of worship or entertainment, schoolrooms, workrooms, and the like, which are unoccupied for longer or shorter periods at frequent intervals, power would be needed during the hours of assembly only.

For their ventilation during the periods of recess, the automatic operation of a well-devised system on the lines already suggested would generally be found sufficient. A series of projecting inlets or cowls might be constructed, and disposed at the outer corners and along the outer walls of a building near the roof, so as to catch the air currents simultaneously at several sides and corners, irrespective of the wind's course, such inlets being continued by tubes to a central chamber, situate, say, in the basement, whence the air would be conveyed to the room. Obviously the acquisition of the air by such means must be both larger and more continuous than by any similar number of inlets in the flat of a single wall; and if the inlet, carefully trapped, were assisted by a water-spray at the central chamber, and the exhaust by a few gas jets, a passage of air would be generally available sufficient to purify the room and keep it sweet and wholesome during the periods of recess without the aid of power; since, roughly speaking, the whole of the fresh air thus passed through the room, and not merely a small portion of it, would be utilised in all parts of the room, in virtue, on the one hand,

of the mechanical arrangements for its distribution, and, on the other hand, of the laws of diffusion, which in a quiet room operate with greater freedom and effectiveness, because less interrupted.

A word here on the automatic principle. Why has automatic ventilation invariably failed in practice? Not because the principle is unsound, for it is a principle of nature. No doubt the chief causes are common to ventilation schemes generally, but become more pronounced in relation to automatic ventilation. The following reasons alone would suffice to account for this general failure:—

1. Misconceptions concerning (a) the nature, scope, and objects of ventilation; (b) the various scientific and other conditions to be observed in dealing with it. Hence—
2. Practical errors, which may be roughly classified as follows: (a) Inadequacy and inappropriateness of the means and appliances employed; (b) want of precision in their design and construction or execution; (c) absence of system, or logical relation, in their various proportions, adjustments, and arrangements.

In a word, rule-of-thumb, blind speculation, and empiricism have hitherto been paramount in a sphere wherein the practical embodiment of philosophic thought following upon adequate scientific knowledge could alone be reasonably expected to succeed.

The essential distinction between mechanical and automatic ventilation is that in the former the currents are forced, while in the latter they are courted, coaxed, inveigled into the room. The principles determining the proper choice of either process in any given case are primarily hygienic, and secondarily economic. If pure fresh air sufficient for the hygienic needs of the occupants of a room be automatically unavailable, the only alternative is to force it into the room by the aid of power; otherwise the automatic process, being the less costly and troublesome, would take precedence. It follows that, for rooms in which recurring periods of assembly followed by more or less protracted intervals of recess necessitate the alternate use of both processes, no scheme of ventilation could be philosophically sound and complete that did not embrace the two in combination, with complete arrangements for their ready alternation at all times.

So far as the mere supply of air is concerned, mechanical ventilation is independent of conditions essential to the automatic process, a sufficiency of power being all that is requisite. The conditions necessary for effective automatic ventilation, as distinct from the mechanical, consist in the operation of certain natural forces, namely:—1. Wind. 2. Atmospheric pressure, arising from (a) the relative changes occurring between the temperatures of the internal and the external atmosphere, and (b) the natural elasticity of the air.

It is usual to ignore these last two forces in automatic ventilation, although, strangely enough, they are, especially the last, recognised and utilised in mechanical processes. The facts, however, remain that, apart from wind pressure, so long and so often as relative thermal changes occur between the two atmospheres, so long, so often, and in like proportions will substantive interchanges occur between them; and, further, that every movement of the air, however caused, involves, in a degree proportionate to the degree of its energy, a *compression* followed by a *rebound*, and these, again, by a succession of compressions and rebounds, in diminishing order, with corresponding substantive interchanges.

Now, admitting that the operation of these two forces and their consequent atmospheric interchanges are often so silent and undemonstrative as to be imperceptible to us, they are on that account none the less real. The most constant, beneficent, and indispensable of the forces of nature are often those whose operations are least demon-



strative and perceptible to the senses; and in the absence of wind pressure, but for the constant operation of these two forces of atmospheric pressure utter stagnation must ensue, which, in any protracted periods of calm, must deal out disease and death, and render our dwelling-houses and places of assembly wholly uninhabitable. So much, at least, do we owe to natural ventilation.

These two forces, then, constitute the *power* which Nature herself mainly employs for the ventilation of places only partially accessible to the action of the wind, and generally during the wind's absence; and it is obvious that, with a view to the efficiency of any automatic scheme of ventilation, the *mechanical* aids employed should be such alone as would enhance the practical utility of this power, seeing that for the purpose in question the supply both of the power and of its available material is restricted. Just as we economise steam, gas, electricity, and other media or forms of energy, employing every practicable device for enhancing their mechanical effects in the direction required, because, while practically unlimited *per se*, they are, as specialised power, restricted in their available supply either by physical or economic conditions, so in the same way, and for precisely the same reason, must we, if we would not stultify ourselves, employ the most philosophic means for economising and enhancing the natural utility of this power, which, while abundant in nature, is in its application to automatic ventilation restricted by the physical conditions attaching thereto.

There is nothing mysterious or involved, however, in the mechanism required for the achievement of the results suggested. But there are certain practical conditions which must be scrupulously observed throughout as guiding principles. These have in part been already referred to or hinted at, but their importance may well warrant their repetition, since to ignore any one of them were fatal to the success of any automatic scheme whatsoever.

1. *Accurate conceptions of the practical capabilities of the automatic principle.*—These may not, of course, be mathematically exact; but approximately accurate they must be, since to seriously overrate or underestimate them would alike be to ensure its failure in any case. We are all familiar with the appliance known as Tobin's Tube. There is a ready demonstration of the energy of which the automatic process is capable in its simplest form, without any mechanical aids, and independently of the wind's pressure. The constancy and much of the energy of its operation are due less to the action of the wind than to atmospheric pressure. Yet it in no way forces or coaxes, but merely *permits* the ingress of the air from outside; nor has it any provision for the diffusion, distribution, or discharge of its currents. It is but an inlet of the crudest kind—a mere hole in the wall, and nothing more. The work done by it, however, furnishes a rough but useful basis for estimating the natural capabilities of the automatic process.

2. *The interception of the wind's currents irrespectively of the wind's direction.*—We have seen how this may be effected. Obviously the areas and numbers of the inlets could be enlarged almost indefinitely, and the supply of fresh air from this source, when the wind is in motion, thus rendered practically unlimited.

3. *The acquisition of fresh air during the wind's repose.* The construction and fitting of the valves attached to each inlet and outlet here become a matter of the highest practical importance, since, in order to operate effectually, they must be sufficiently sensitive to respond to the slightest atmospheric movements, and sufficiently well fitted to prevent leakage. Few persons seem to have any adequate conception of the importance of this systematic arrangement of valves in automatic ventilation. No automatic scheme could be sound or complete without it, since upon its steady and continuous operation during the

wind's repose the constancy and efficiency of any such scheme must mainly depend.

4. *Economy.*—The whole tenor of our observations in this section uniformly emphasises the essential importance of economising both the motive power and the material of automatic ventilation, at least when the wind is feeble or quiet. Every foot of air once admitted should be pressed into actual service, and permitted to escape only when it has done its full share of the work of ventilation and purification. There is nothing chimerical in this. It means simply that the doors and windows shall be close fitted, the floor tight and sound, the ventilation appliances and their accessories properly constructed and adjusted. The admission and discharge of the air being thus respectively restricted to the prescribed inlets and outlets, its complete and uniform diffusion, distribution, and utility would be ensured.

It is obvious that by thus economising, distributing, and utilising the whole of the air passing through a room a greater amount of real and effective work might be obtained from it, even automatically, than from much larger quantities of air mechanically forced into the room at one or more points, only to pass out at others, leaving the air space occupied by the assembly untouched. Hence it follows that, upon the arrangement suggested, much *less power* would be required to efficiently ventilate a crowded room than upon any of the ordinary methods.

The withdrawal of the used air at the floor line is already much in practice. This, however, will not alone achieve the results here desiderated—the perfect diffusion and distribution of the air currents through all parts of the air space. The greatly increased number and aggregate area of inlets and outlets, suitably disposed about the interior and exterior of the building, and furnished with valves, regulators, and other appliances and arrangements, as suggested, with the complete and systematic co-operation of all the parts of the entire mechanical arrangement, are wholly indispensable to these results.

#### THE SHEFFIELD SOCIETY.

#### Extracts from the Opening Address of the Session. By Charles Hadfield [F.], President.

Delivered 9th October 1895.

After a few preliminary remarks in reference to the rare and valuable collection of prints, engravings, and books lent for the occasion by Alderman Brittain and Messrs. B. Bagshawe and J. B. Mitchell-Withers, Mr. Hadfield congratulated the Society upon its increasing strength, briefly reviewed its past year's work, and continued:—

I do not wish, at a gathering like the present, to try the good nature of my audience, but I venture to ask their forbearance while I address a few words to the younger members of the Society, who have one day to occupy our places, lead the architectural opinion, and supervise the building work of this important and growing city. In the first place, I would urge them in all their pursuits to aim at a lofty ideal, ever to bear in mind the position and responsibilities they may have one day to bear, and, by making use in the heyday of youth of the advantages they come across, to qualify themselves for the part they have to fill. The word "architect," derived from the Greek, signifies a chief artificer or constructor. In the records of early Christian times, and notably in those of the close of the twelfth to the sixteenth century, the architect is generally styled "the Master" (*magister operum*), or Master Mason. I may instance Anthemius and Isidorus, both architects or engineers employed by the Emperor Justinian during the erection of the great church of St. Sophia at Constantinople in the sixth century. Master Wilars d'Honecort, a facsimile of whose album or sketch-



book is exhibited to-night, was another of these men. The original manuscript, of thirteenth-century date, is preserved in the Bibliothèque Nationale, Paris, numbered "S. G. Latin 1104." He appears to have been extensively employed in various parts of France, and even Hungary, and informs his readers that he had travelled in many lands, and writes:—

Wilars de Honecort salutes you, and implores all who labour at the different kinds of work contained in this book to pray for his soul, and hold him in remembrance. For in this book may be found good help to the knowledge of the great power of masonry and of devices of carpentry. It also shows the power of the art of delineation, the outlines being regulated and taught in accordance with geometry.

Master William of Sens, a Frenchman, who was retained by the monks of Canterbury to rebuild the choir of their cathedral after the disastrous fire in 1174, and his successor, Master William the Englishman, may also be instanced: and in France, during the thirteenth century, Robert de Luzarches, and after him Thomas de Cormont and his son Regnault, were engaged at the cathedral of Amiens, and Pierre de Montreuil at the Sainte-Chapelle and other thirteenth-century churches in Paris. In the cathedral of Rheims, on an incised slab, is the effigy of Hugues Libergier, with his measuring-rod and compass, and an inscription recording the erection of the church under his direction in the year 1239. These men, all laymen, were probably in much the same position as the modern resident engineer.

France, from the days of Charlemagne to our own, has been a great centre of the building art, and most of the old trade customs are yet in force. The architect there, being the chief director and thinker in building operations, is closely in touch with the artists and craftsmen engaged, and by his position keeps at arm's length the self-styled specialist, who in the United States and this country is allowed, mainly by the apathy or want of knowledge of some architects, to elbow them out of their legitimate sphere of authority. A French architect does not think any detail of his building too small for attention, and modern French work, unlike a good deal of contemporary English work, bears comparatively few marks of detail culled from trade catalogues. It is artistic and thorough all through, from basement to roof-tree.

Vitruvius lays down that an architect should be ingenious and apt in the acquisition of knowledge. He should be a good writer, a skilful draughtsman, versed in geometry and optics, expert at figures, acquainted with history, somewhat of a musician, and not ignorant of the sciences, both of law and physics. These ideas of Vitruvius clearly point to the exalted and responsible position of the architects of antiquity, and there is no doubt that in the fifteenth, sixteenth, seventeenth, and eighteenth centuries men such as Brunellesco, Alberti, Bramante, Peruzzi, Michelangelo, Palladio, and Vignola in Italy, Lepautre and others in France, and our own Inigo Jones, Wren, Vanbrugh, and the like, lived up to much the same high standard.

The present is an age of marvellously advanced draughtsmanship and severe competitive examinations in every culling; but while urging the young architect to fit himself by study for passing through such an ordeal as the Examinations of the Royal Institute, let me remind him that brilliant draughtsmanship and the passing of examinations are but a means to an end, and will not necessarily make a man into a good architect. I have examined the drawings of some of the above-mentioned masters, and doubt if any of them would have passed muster at a South Kensington Science and Art Examination in freehand or building construction; nevertheless their authors immortalised themselves for all time by their works in marble, stone, and brick. They were workers and students to the end of their lives, and I hold them up as your pattern.

You have well-organised classes for sketching and the measurement of old buildings, for land surveying, for historical study, the first and last named under a leader whose achievement in measuring and delineating the north transept of Lincoln Cathedral brought him the well-earned and coveted distinction of the Royal Institute Silver Medal some two years ago.\* Let me suggest also for your consideration a work that ought to be no longer delayed—*i.e.*, that of carefully drawing and measuring old local buildings, and any architectural detail of interest they may happen to contain, with a view of issuing the drawings in book form to subscribers. This has been successfully done elsewhere. The German Societies of Architects make it one of their chief duties, and issue complete records of the buildings in their own immediate district. The Sheffield Guild of Arts and Crafts, through its President, Mr. C. Green, has already drawn attention in the press to the lamentable destruction that has been going on and must necessarily continue to take place in this city of much that is worthy of record. Let us join hands with them before it is too late. There is now, at the eleventh hour, plenty of material to work on, and in gathering it in you will be garnering rich stores of old decorative and building types, and at the same time cultivating your designing faculties.

I should like to see more use made by young architects of the admirable classes for the study of geometry, strengths and testing of materials, carpentry, and the like at the Sheffield Technical School, where practical knowledge may be gained from practical men. This kind of training, and the inspection, setting out, and study of building work, whether in the builder's workshop or on the actual building, is invaluable.

A Frenchman thinks far more about the charm which his imaginative faculty teaches him to impart to his work, and its inherent character and interest, than of all the wretched shibboleths about historic styles we are eternally proclaiming in this country and in America. Cannot we, once for all, relegate to the shades of oblivion the regulation phraseology of the day as to our buildings being designed in "Free Classic," "Early Gothic" freely treated, or "English Renaissance"; or as to Mr. Jones being a Classic and his rival, Green, a Gothic man? To the architect who has learned the grammar of his art the whole thing should be exquisitely absurd.

Let the young architect in his hours of recreation go into the fields and woods with his colour-box and sketch-block, or scour the hills and dales of England, and he will find plenty of material to enable him to invest his own efforts with something of the charm and character that were inseparable from all periods of our old English architecture. When he has to undertake a building, after having carefully ascertained the wants of his client, and laid down the plan and general lines, such a course of study will tend to strengthen his faculty for original and artistic design.

This is a commercial age, and an architect must train himself up to habits of system, hard work, and punctuality in his appointments. We have heard it asked lately if "Architecture be a profession or an art?" but there is little good. I am convinced, to be gained by a parade of high artistic to the exclusion of commercial or professional ability, or *vice versa*. The British public, as a rule, are quite shrewd enough to read between the lines, nor are they likely to value such attempts at transparent self-advertisement one whit more than those of the architect who, posing as a sanitary specialist, adorns the front of his building with ventilating pipes and other interesting sanitary requirements, which a little trouble or forethought might have relegated to a less obtrusive position without injury to efficient working.

\* Mr. J. R. Wigfull [A.].



## THE SCULPTURED COLUMNS OF THE TEMPLE OF DIANA AT EPHESUS.\*

By ALEX. S. MURRAY [*H.A.*], LL.D., F.S.A.

Read at the General Meeting, Monday, 18th November 1895; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

THE last occasion on which the sculptured columns of the Temple of Diana at Ephesus were discussed at the Institute was, so far as my knowledge goes, in 1883, when the late James Fergusson † gave you his views on the matter. These views he supported mainly by reference to the remains of the columns in the British Museum; and if the long period of twelve years has been allowed to elapse without any steps being taken on our part to confirm or modify his opinions, that has not been due to any unwillingness of mine, but rather to the fact that other operations in my department of the Museum seemed more urgent. At last we have been able to overtake this task also, with a result which varies in several particulars from that arrived at by Fergusson.

On one of his visits to our workshops Fergusson had been informed that each of the stones now worked into square, sculptured pedestals had on its top surface a segment of a circular bed which showed that four of these stones, set back to back, had been intended to serve as a pedestal, apparently for a column, and that the only sculptured drum which we possess, retaining its lower torus, fitted exactly on to this bed [fig. 5]. Proceeding, however, to work out his restoration, he found it necessary to interject between the sculptured drum and the square pedestal an imaginary base, which ought at least to have preserved the same diameter on its upper as on its lower bed. We have dispensed with this or any other intervening base, and have been led to do so not only by the fact that the sculptured drum fits exactly on to the square pedestals, but more particularly because the bed on the top of the pedestals has been eased off on the outer edge for a width of about two inches, apparently for the express purpose of taking the weight off the torus. For the sake of argument, it could be supposed that the circular bed had been prepared for an ordinary Ionic base of one of the fluted columns, so as to yield a sculptured pedestal under an ordinary Ionic column, not unlike what we see in the portico of the great altar at Pergamon. But the one Ionic base which we possess, though suitable as regards diameter, has its bed eased off to twice the width of the bed on the sculptured pedestals, as it properly ought to have, considering the greater projection and thinness of its lowest member. So far as I can see, there is no escape, much as it may be desired, from bringing the sculptured drums directly down upon the sculptured pedestals, as we have done in the Museum. The

\* The headpiece to this Paper represents (full size) on the left a coin of Hadrian, and on the right one of Antoninus Pius, both in the collections of the British Museum.

† In the *Antiquities of Ionia* (Society of Dilettanti,

1881), Pt. IV., p. 12, he speaks of a contribution to the Institute in 1877 founded on the Papers of Mr. Wood. See *TRANSACTIONS* 1876-77, page 77: "On the Temple of Diana at Ephesus, and the Hypæthrum of the Greeks."

effect may seem strange, but it must be remembered that in such instances of sculptured columns as those of Trajan in Rome and of Theodosius in Constantinople the shaft is separated from the pedestal mainly by an enriched torus; and, possibly enough, it was from Ephesus that the idea of these sculptured columns took its origin. We possess in the Museum two cylindrical bases sculptured all round in relief, and in a later manner than that of Ephesus. Both of them come from Halicarnassus, which was within easy reach of Ephesus. The better preserved of the two has the figures standing on a projecting flat band, beneath which is a scotia and a torus moulding. But although the influence of Ephesus is undeniable in these two bases, I see no way of utilising them for our purpose. They had, apparently, served as bases for small monuments. For myself, I do not so much regret the absence of any intervening member between the drums and pedestals of the front row. It is when we come to the second row of sculptured columns that I feel the difficulty of not having under them some form of base which would range with the Ionic bases along the sides of the temple. On the square pedestals the relief is very high, as compared with that of the drums. And what is more interesting is the fact that the angles in every case had been occupied by figures sculptured with great prominence, which must have taken off all appearance of squareness in the die of the pedestals, thereby mitigating any sense of conflict that might exist between the pedestals and the sculptured drums.

Here I may state that our reconstruction of the remains in the Museum does not go beyond showing that the sculptured drums rested directly on square pedestals, and that these pedestals were sculptured on all four sides. To this latter point I will return presently; but meantime you will expect me to give some reason for thinking that these pedestals had stood on a lower platform at the two ends of the temple, as shown in the elevation [fig. 1] which has been worked out with so much talent by our young friend Mr. Cromar Watt.

According to Wood, the temple was raised on a platform 9 feet  $5\frac{1}{2}$  inches high, measured, as he says, from the pavement of the peristyle down to the pavement beyond the platform (*Discoveries at Ephesus*, pp. 264 *et seq.*). He found the lowermost step of the platform in position on the north side for a stretch of 100 feet, and he found, also in its original place, the base of one of the Ionic columns on the stylobate, so that his measurement of the height of the platform may be taken as correct, except in one particular. He treats as a square plinth under the base what can only have been a stone of the stylobate on which the column rested [fig. 3]. That stone retains only one worked face; all the rest is broken more or less. Yet it is not so much broken but that we can easily perceive on two sides that it had been originally fashioned so as to key into adjoining stones, which could not have been the case in a plinth. More than that, the base itself, directly above the joggles, as our masons call them, has been, in a careful and finished manner, cut into, as if to receive a metal railing extending from column to column.

Wood leads us to suppose that this base belonged to the inner row of columns, in which case the inner row would have stood on a raised step. But as a metal railing along the inner row would serve no purpose, I cannot help thinking that there is some confusion between this and the other base which he found in position on the outer edge of the stylobate, where the railing would be of excellent service. On this view of the matter we must accept his plinth as a top stone of the stylobate.

It was natural enough for Wood and Fergusson to assume that an Ionic column in Asia Minor would have a square plinth. But there are instances, such as the Nereid monument from Xanthus in Lycia, to prove that there was no rule in the matter in Asia Minor. Again, there is the fact that Vitruvius (iv. 1, 7), when speaking of the Ephesians as having been the first to introduce bases under the columns of the Temple of Diana, compares these bases to a shoe, from which comparison it would seem as if he had been thinking of a square plinth as



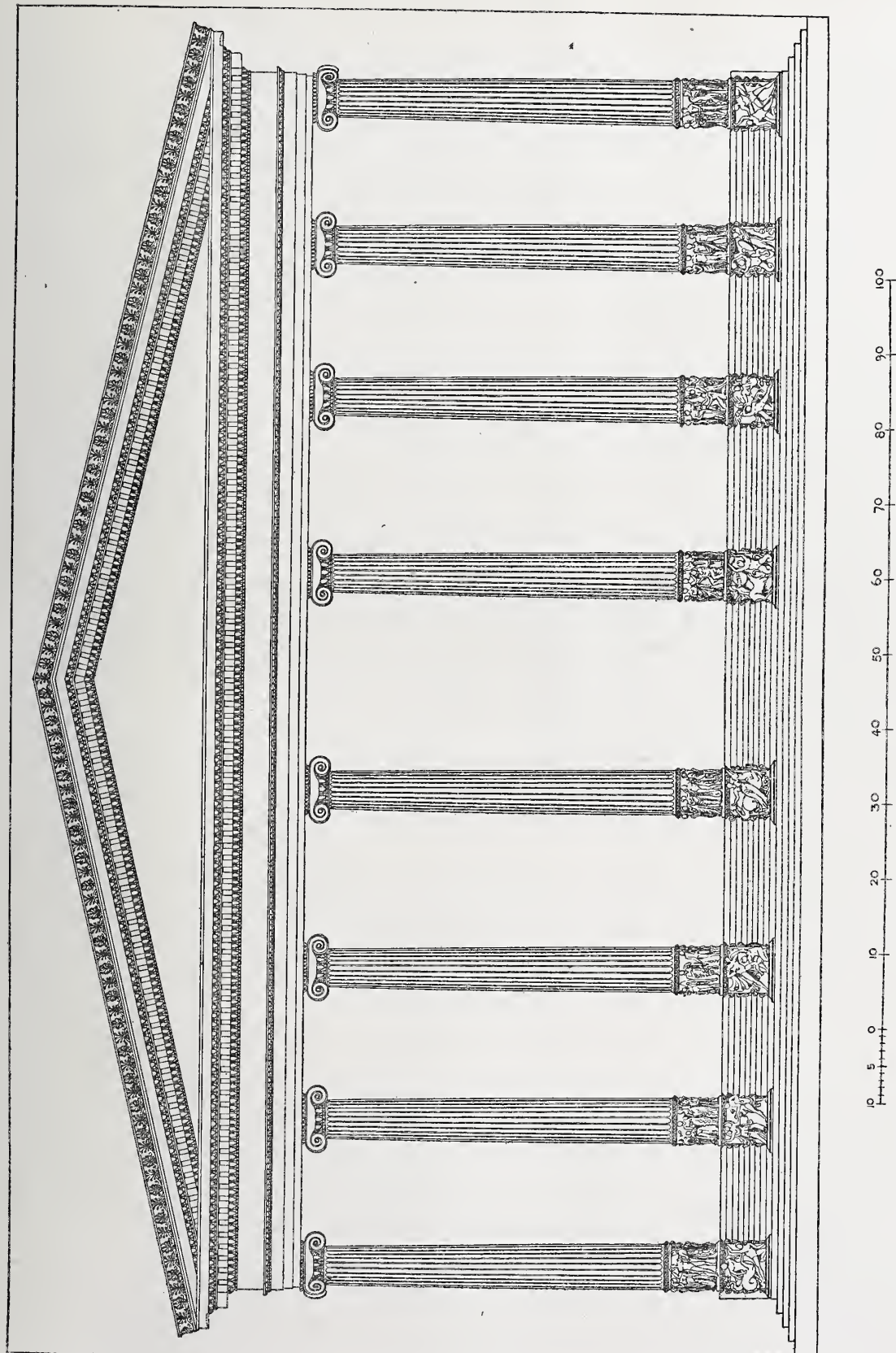


FIG. 1.—CONJECTURAL RESTORATION: ELEVATION OF THE TEMPLE OF DIANA AT EPHESUS.

forming the sole of the shoe. But Pliny (xxxvi. 179), referring obviously to the same tradition, is more guarded in his expression, or possibly more ignorant. He is content to say that the Ephesians had been the first to put bases under their columns. I quite allow that the Ionic base which we possess is extremely slight in its lowest member, and so far suggests a square plinth under it, but it is not in fact slighter than the bases of the Nereid monument, which undoubtedly have no plinths. Besides, the evidence furnished by the square stone which we possess seems to me conclusive against its having been a plinth.

If, then, we regard Wood's plinth as a top stone of the stylobate, we must proportionately increase the height of the platform, which will now reach 10 feet 10½ inches. His measurements of the area of the temple, taken on the lowermost step, are 418 feet 1½ inch × 239 feet 4½ inches, which is not far from the 425 feet × 220 feet given by Pliny for what he calls the *universum templum*—doubtless the lowermost step of the platform. On the top of the stylobate or what little remained of it, Wood's measurements are 342 feet 6½ inches × 163 feet 9½ inches (*Discoveries at Ephesus*), which, as you will observe, leaves an immense space to be accounted for. For the ascent to the stylobate he proposed a flight of fourteen steps all round the temple, each with a tread of 19 inches; but as this left an enormous projection of stylobate outside the columns, and as the rise and tread of the steps seemed to be correctly ascertained, Fergusson felt himself driven to assume a sub-platform of three steps, on which platform he placed a series of wide, projecting piers, which he supposed to have been richly sculptured, and on this account to have been the chief glory of the temple.

As some such arrangement was absolutely necessary in view of Wood's measurements, I have taken advantage of Fergusson's platform for the two ends of the temple, and have placed on it the sculptured pedestals, in room of the projecting piers, which he introduced without any trace of evidence among the remains. We have preserved the graduated intercolumniations, as given by Wood, no doubt from data which he has not chosen to communicate, and as accepted by Fergusson. The temple having been dipteros octastyle, as Vitruvius says, and having at the same time had thirty-six of its columns sculptured, it seemed a simple and natural arrangement to dispose these thirty-six columns in this way: two between the antæ, without bases or plinths; a row of eight, also without bases or plinths, resting on the top of the steps; and a front row of eight, raised on square, sculptured pedestals to the level of the stylobate, and entirely in front of the steps. For a long time I thought, or rather wished, that the steps should rise up the sides of these pedestals and be engaged in them. But there is no trace of that visible. On the contrary, as I hope to show, the pedestals were sculptured on all four sides.

Wood ascertained that at the angles of the temple the intercolumniations from centre to centre of column, both on front and side, were 19 feet 4 inches; and as this was the smallest of his intercolumniations, it seemed reasonable to adopt this measurement for the distance between the two rows of columns on the fronts, from centre to centre. The next question was how to arrange the necessary steps within this space. Wood, as I have said, found a considerable stretch of the lowermost step of all, and gives its rise as "barely 8 inches" on p. 238 (*Discoveries at Ephesus*), but as "little more than 8 inches" on p. 264; its tread as 19 inches. We cannot, however, reconcile these statements with the stones which he sent home, which yield a rise of 8½ inches and a tread of 22 inches. In this difficulty we have adopted for the lower platform three steps corresponding to the actual stones now in the Museum, while for the upper platform we have introduced the slightly different dimensions of the great altar at Pergamon, a neighbouring but somewhat later monument.

As regards the sides of the temple, the existence of a metal railing from column to column, to which I have already referred, seems to be a sufficient defence for leaving them to descend vertically to the lower platform. That these sides were sculptured in the manner of the



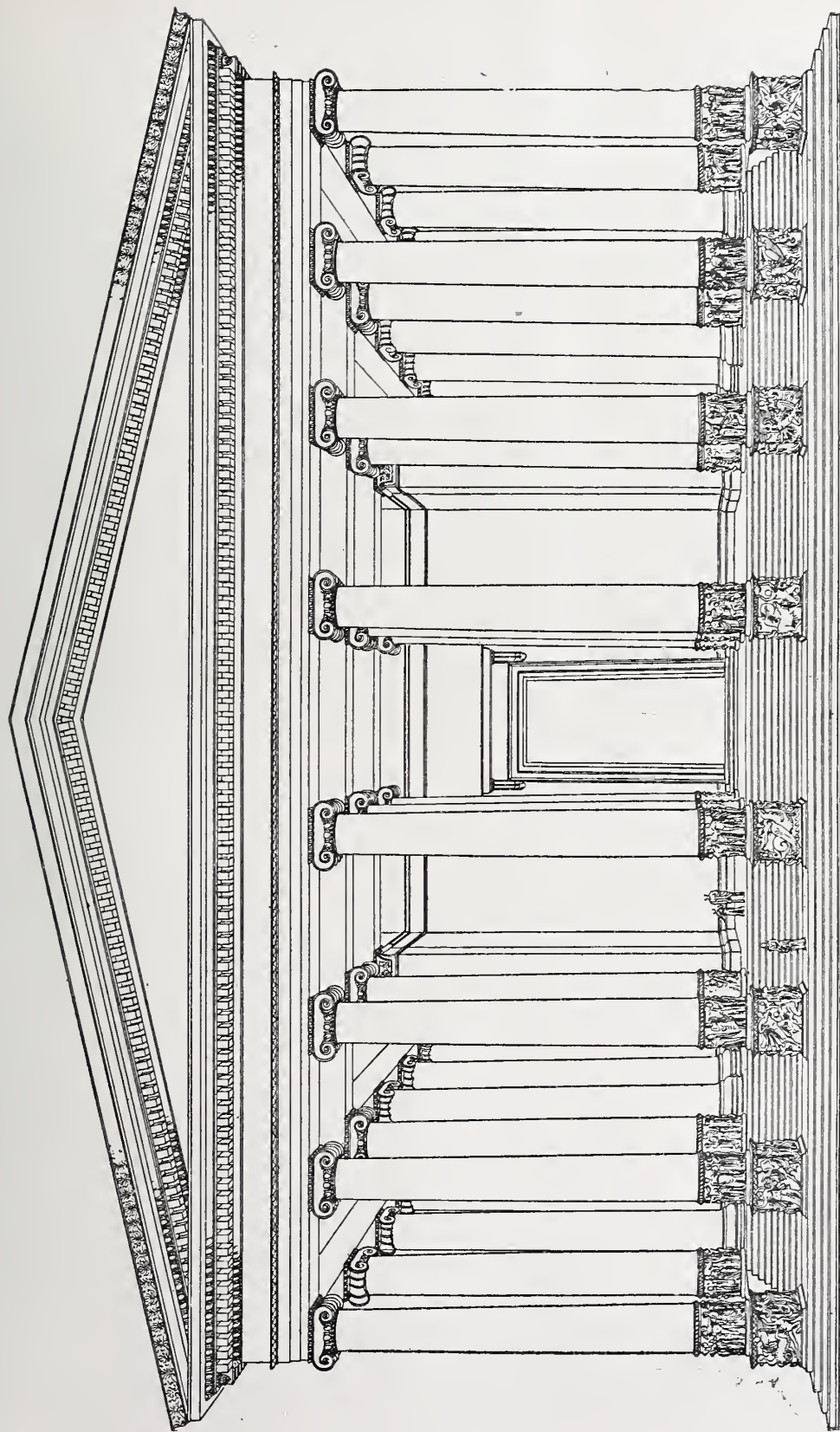


FIG. 2.—CONJECTURAL RESTORATION : PERSPECTIVE VIEW OF THE TEMPLE OF DIANA AT EPHESUS.



colonnades round the great altar at Pergamon seems to me much open to doubt, though Fergusson made a strong point of this comparison.

So far, we have ascertained that certain of the sculptured columns stood on square, sculptured pedestals; but we have not ascertained, and cannot now by any possibility ascertain how many of the thirty-six sculptured columns had such pedestals, or whether, indeed, all of them may not have been so enriched. At the same time, it must seem incredible that any one of these huge pedestals could ever have stood on the stylobate. Thus far we can surely go. But, again, it does not necessarily follow that because certain of the sculptured columns

had stood on pedestals at a lower level, the whole of the eight front columns had so stood. My view of the matter, as shown in the elevation, may be only one among other possible views. All I would say is, that it is the simplest way which has occurred to me out of a great difficulty.

At this stage we may take note of certain late Roman coins which profess to represent the façade of the temple at Ephesus. The best one (Hadrian) goes so far as to indicate quite clearly that the lowermost drums of the columns were sculptured [p. 41]. At the same time it crowds its columns together toward each angle, so as to leave an immense gap in the middle, through which the statue of the goddess may be seen,

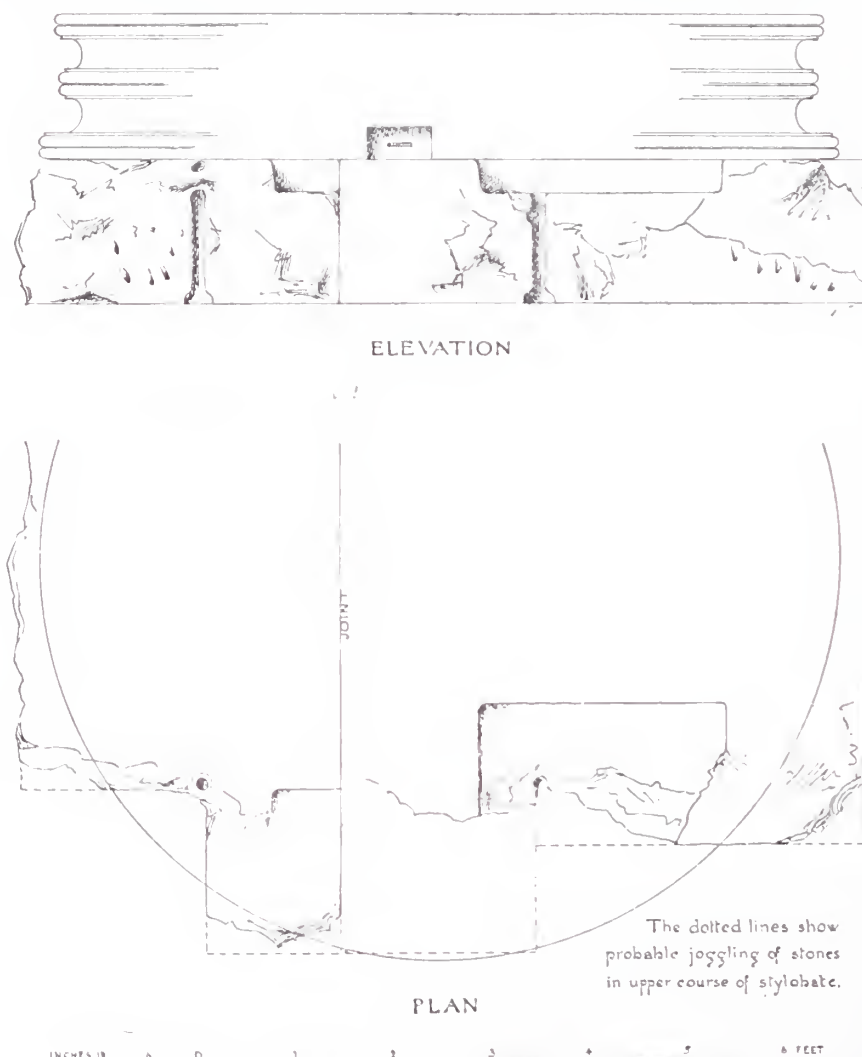


FIG. 3.—BASE WITH STONE OF STYLOBATE. TEMPLE OF DIANA AT EPHESUS.

presumably through the open door of the temple. As a rule, these coins exhibit a continuous platform of steps along the front. The exception is an otherwise carefully struck coin of Antoninus Pius [p. 41], which, instead of steps, has a continuous vertical podium. That this was intended as a general indication of our sculptured pedestals I do not wish to say, but at least it may pass as a sign that there was some difficulty in rendering the steps. Had these coins been meant to be authentic witnesses, it is clear that they would not have clustered the

columns in two groups towards the angles, and would not have differed about the steps. In short, these late Roman coins are seldom reliable as to what they omit, though occasionally reliable as to what they retain.

I gladly accept the evidence of the coins so far as concerns the sculpturing of the lowermost drums of the columns; and this brings me to a question which has been much discussed. You will remember Pliny's statement that thirty-six of the columns were sculptured in relief—*cœlatæ*; to which he adds the two words, *una scopa*, as they stand in his MSS. The general practice has been to alter these words into *una a Scopa*, meaning that one of the thirty-six was by the famous sculptor Scopas, notwithstanding that this sculptor had been dead and gone long before the building of the Temple. The latest writer on the subject, Professor Benndorf, of Vienna, suggests that one of the columns had been copied from a work of Scopas. He endeavours to trace a reminiscence of the hand of Scopas in the best-preserved of our drums. But this is the merest conjecture; the style of Scopas is sufficiently known to answer emphatically such vagaries. It is true that Pliny's MSS. assign the odd number of 127 columns to the temple, and that this odd number, if it really existed, would not unnaturally suggest that one of the columns had been more conspicuous than the rest, for some reason or other; but the easy mistake in a number offers no foundation for theories which run contrary to everything we know, including among those theories Fergusson's attempt to work in this odd number by means of nine columns in the back of the temple. Besides, it is incredible that Pliny would have described a later copy as the work of Scopas.

Long ago Winckelmann proposed to correct Pliny's text by reading *uno scapo*, one shaft; but this, though the first step in a right direction, left the text confused, since thirty-six columns could not be sculptured on one shaft. It seems to me that we must make what philologists would consider a reasonable alteration, and read *imo scapo*, meaning, in Vitruvian language, the lowermost part of the shaft. We should then confirm the coins and be in agreement with the existing remains, so far as we can judge in the present state of things.

You are aware that Wood found and sent home a large piece of a drum which exceeds the others in diameter by 3 inches, and is at the same time sculptured in much higher relief. He suggested that this particular drum had been placed higher up in the column. That, no doubt, might account for the higher relief; but surely it would not account for the increase of the diameter. That would be absurd. It seemed to me not unreasonable to assume that the angle columns had been increased in diameter, as in other known temples, and, accordingly, we have taken this larger drum as a type of the angle columns. Of course this 3-inch thicker drum at the angle implies a proportionate increase in height, which may or may not have been unsightly.

The height of the columns is given by Pliny at 60 feet; and as Wood ascertained this dimension to be very approximately correct, we have accepted it. We possess two capitals which differ in size, and have assumed that those of the smaller dimension had belonged to the inner row of columns. We have two pieces of the architrave to be guided by; but there is no trace of the frieze. Wood, as I may remind you, employed the square blocks which we have utilised for pedestals as parts of the frieze in his restoration. When told that there were more than four angle stones among them, while he only required four, his equanimity was not disturbed. The circular beds on the tops of those stones seemed to him only to prove that the stones had been originally prepared to serve as drums of columns! For the dentils we have no evidence beyond extreme probability. We have part of the cornice, showing its enrichment, and one lion's head. For the pediment we have two stones of the tympanum, which give the rake of the pediment. Lastly, we have a fragment of one of the acroteria.

I must now return to the sculptured pedestals. It is with them that we are chiefly concerned in the Museum. Such views as I have laid before you in regard to the general aspect

of the temple may stand or fall; but the sculptured pedestals are on a different footing. First of all is the question, Were they sculptured on all four sides?

In one of the pedestals we have put together [fig. 5] there are three separate stones, on each of which is part of a Nereid riding on a hippocamp. Enough of the joints of these stones remains to show that they had all belonged to one pedestal. The result is that we have on three of the faces a repetition of the same subject—a Nereid riding on a hippocamp. On the fourth side the sculpture has been entirely defaced. But that it also had been sculptured is in the highest degree probable, though it does not necessarily follow that this fourth side had again represented a Nereid on a hippocamp. That would, perhaps, be going too far in the direction of mere decoration; and under the influence of this feeling I was at one time tempted to suppose that on the fourth side had been Achilles receiving his armour, in which case there would be a definite subject for the whole pedestal, reminding us of the base by Praxiteles found some years ago at Mantinea, on which we have as a central sub-

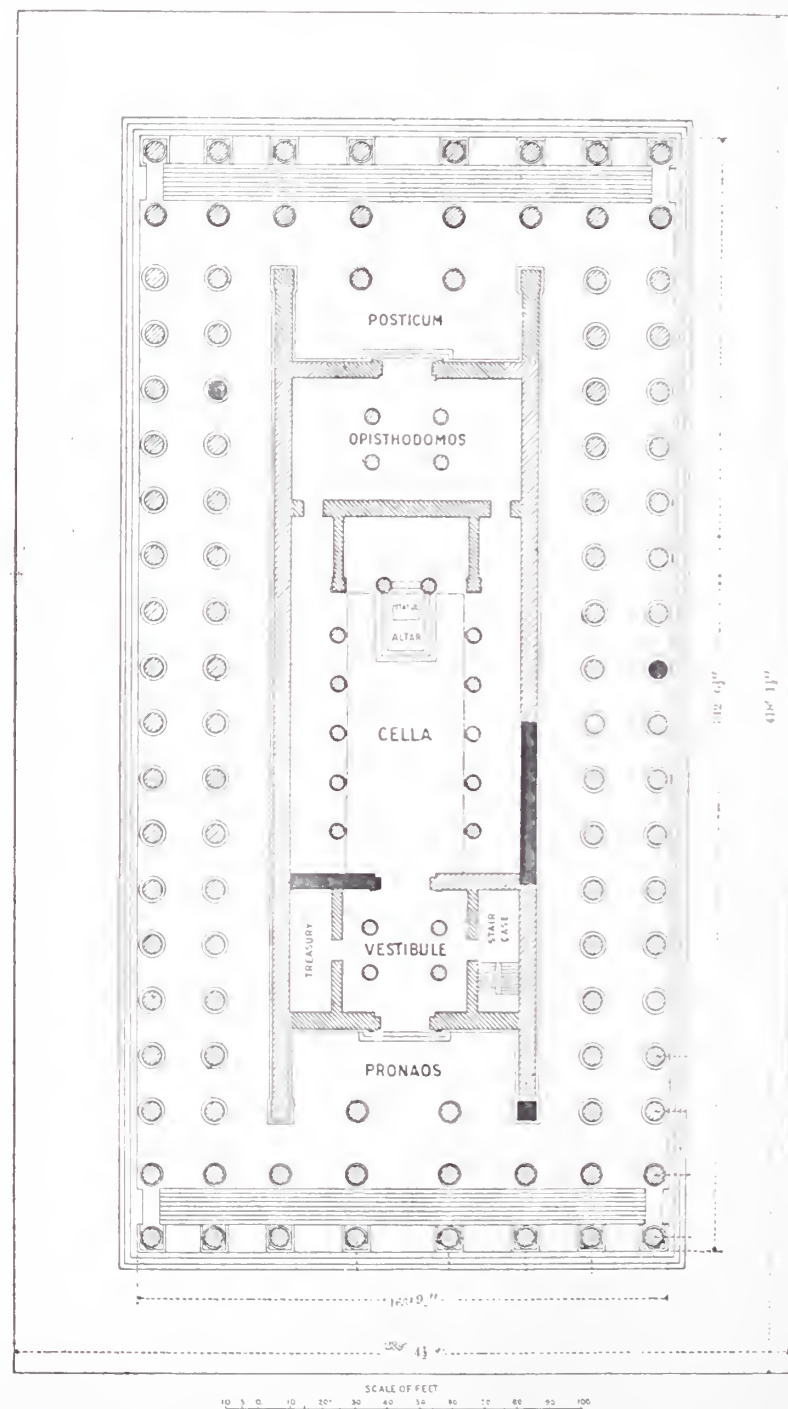
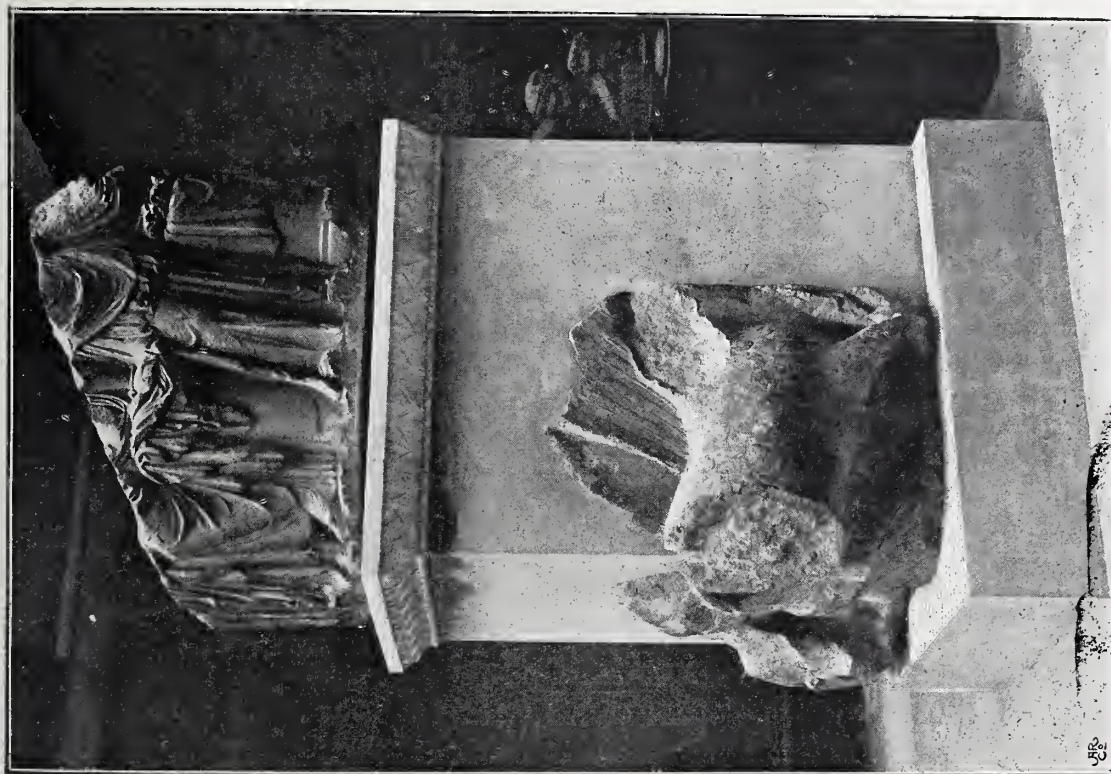


FIG. 4.—CONJECTURAL RESTORATION: PLAN OF THE TEMPLE OF DIANA AT EPHESUS.

ject the contest of Apollo with Marsyas, and on the sides groups of the Muses disposed in threes. On the other hand, it is quite clear from what remains of two of the Nereids that they





FIGS. 5 AND 6.—SCULPTURED PEDESTALS AND DRUMS FROM THE TEMPLE OF DIANA AT CORINTHUS. NOW IN THE BRITISH MUSEUM.

were not occupied in carrying armour for Achilles. On the contrary, they have the right hand raised, holding aloft their *himation*; while the third fragment shows that the left hand was clasped round the neck of the hippocamp, the whole action being such as we frequently see on engraved gems.

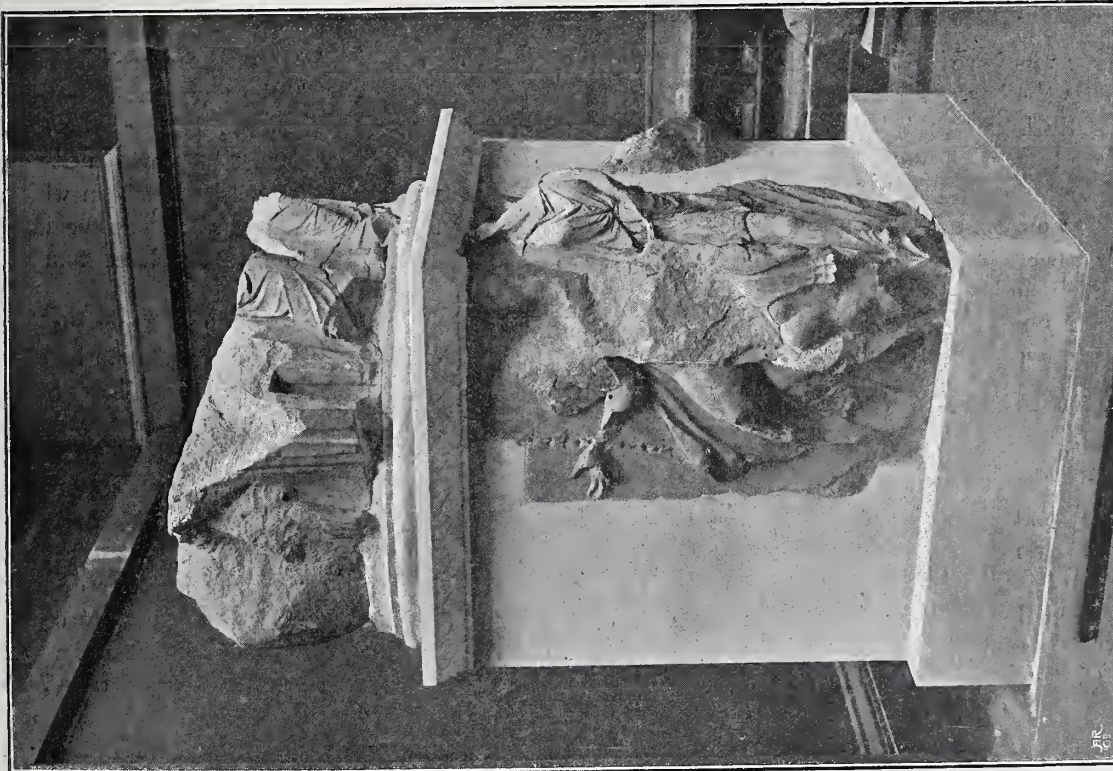
Failing Achilles, I cannot think of any other subject which would give unity and motive to the Nereids, and therefore feel myself driven to the conclusion that this pedestal had been treated in a purely decorative manner such as we are sufficiently familiar with in later bas-reliefs and on mosaics where Nereids on hippocamps are introduced for the purpose of pure decoration and without any binding motive. It is unfortunate that we cannot be quite certain on this interesting point. But the evidence seems to me chiefly in favour of a repetition of the same design on all four sides.

From another of these pedestals (fig. 6) we possess an angle stone having on one face a Victory leading a cow or a bull, and on the other face a Victory leading a sheep. In both cases you may have to search for the Victory; but the evidence of her presence, though slight, is unmistakable. Then, again, we have a fragment consisting of the head of a sheep, which from every consideration we are entitled to claim for this same pedestal. But, apart from this fragment, the angle stone with its Victories leading animals to sacrifice on two sides seems to me to exclude every other possibility for the remaining two sides, except that of other Victories similarly engaged. The balustrade of the Temple of Victory at Athens is a case in point. There is no central motive there, but only a series of Victories leading animals, or otherwise engaged in the commemoration of a triumph. A Victory on two sides of our pedestals, and almost certainly also on the third side, invites the inference that there was also a Victory leading an animal on the fourth.

From a third of these pedestals (fig. 7) we again possess an angle stone. Seated on a rock projecting from the angle is a figure of Heracles. On one face of the stone his right arm is extended towards a missing figure; on the other face a woman drags at him backwards. Unless this is a representation of a legend which hitherto has been known only from literature, viz. Heracles between Virtue and Vice, a legend which had its origin in Asia Minor, I can find no explanation of the scene. During these twenty years no explanation of any kind has been offered, so far as I am aware. But from our present point of view it is more interesting to note that we possess a fragment of another angle stone on which has again been a figure of Heracles seated on a rock. If I am right in placing this fragment in the same pedestal, we have another suggestion of the principle of repeating a similar design on all four sides. And here I may mention that the rough, projecting rock on the angle and the huge body of Heracles above it show that the angles of the pedestals had originally presented an irregular, bossy appearance. In the Victory pedestal, the head of the ox and the rump of the sheep must have similarly produced a large irregular, projecting mass at the angle, while the breakages at the angles of the other pedestals clearly betray the same original effect.

In the fourth pedestal (fig. 8) we have two stones which are now placed in the position in which they were found. On one face is the combat between Heracles and Kŷknos. On the other face has been a female figure and a deer. Only the right arm of the female figure remains. Her form had occupied the angle of the stone. Her hand is stretched out, as if to protect the deer. With one of the labours of Heracles on one side, and finding a deer on the other, we naturally expect it also to be a labour of Heracles—his capture of the Keryneian deer. We may even go a step further, and expect other labours of this hero on the other sides of the pedestals; and accordingly I have inserted in it a fragment of Heracles overpowering the Centaur. The only remaining fragment which we possess from these pedestals is part of a wrestling group, which may have been Heracles and Antŷus. But I have not ventured





FIGS. 7 AND 8.—SCULPTURED PEDESTALS AND DRUMS FROM THE TEMPLE OF DIANA AT EPHESUS. NOW IN THE BRITISH MUSEUM.



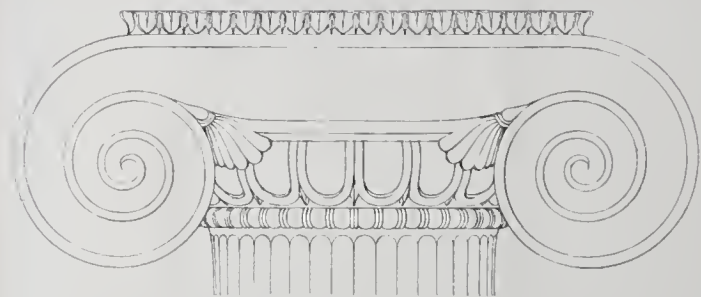
to insert that fragment. It is almost the only fragment which we have not utilised in these restorations.

The conclusion which I venture to draw from these various facts and probabilities is, first, that the pedestals were sculptured on all four sides; and, secondly, that the sculptures were in some cases an identical repetition of subject on all four sides, in others a series of incidents connected together in thought, but not united by an artistic motive.

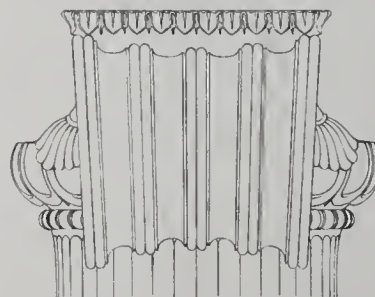
Previous to Wood's excavations there existed only the Roman coins, to which I have referred, to illustrate the passage of Pliny that certain of the columns of the Temple at Ephesus had been sculptured in relief. The arrival of the sculptured drums placed the matter beyond doubt. But the question still remained, What could have put it into the head of the architect to have parts of his columns sculptured? Was it a new and original idea? For a time it seemed so; but we shall see presently that what the architect did was simply to perpetuate in his new building what had existed in the older temple on the same site, not attempting in any way to retain the archaic style of the older sculptures, possibly even changing the subjects of them to meet the tastes of his own day, but aiming principally at reproducing the general effect of the older temple.

The temple of which we have been speaking till a minute or two ago was preceded, on the same spot, by another which was burnt down, as tradition says, on the night when Alexander the Great was born. That older temple had been erected about 560 B.C., the time when Cræsus with his wealth ruled the neighbouring kingdom of Lydia. We learn from Herodotus that Cræsus had contributed the cost of most of the columns of that temple; and Herodotus was likely to know the truth from his having lived in exile, in the island of Samos, almost within sight of the temple. Possibly enough he had seen the name of Cræsus inscribed on the columns as the donor. At all events, Wood, in the course of excavating the basement of the later temple, came upon a series of piers into which were built numerous fragments of the burnt temple, including several parts of a base moulding on which the name of Cræsus as the donor was inscribed. Some years ago I endeavoured to reconstruct out of these archaic fragments the base and lowermost drum of one of the older columns, with the purpose of showing that the later temple had obtained from the older one the idea of a sculptured drum at the foot. Since then we have found part of a very bold torus, enriched with a leaf pattern, which fits on to the top of the archaic drum. It shows exactly the flat treatment of the leaf pattern which we see on the contemporary altar of Pisistratus at Athens. But I call your attention specially to it because some similar member may have been introduced also into the later temple, though we have no remains of it.

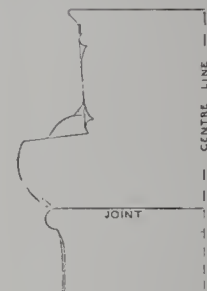
Among the archaic remains were also several pieces of capitals, which much occupation has prevented us from attempting to put together till quite recently. I am glad to be able to exhibit a drawing of one of these capitals by the skilful hand of Mr. Watt [see illustration opposite]. The resemblance between it and the capital of the Temple of Hera, in Samos, is particularly striking, and, indeed, is peculiarly interesting when we remember that Rhæus, the architect of the temple in Samos, was also the sculptor who executed certain works for the Temple at Ephesus; while his relative Theodorus, with whom he is associated in ancient literature, invented a new sort of concrete for the foundations of the Temple at Ephesus (Pausanias, x. 38, 5, and Diog. Laert. II. 103). In both capitals we have the same even number of four eggs on the front, instead of the usual odd number. Between the spiræ of the volutes the canalis, as it is called, has the same convex form instead of the usual concave. In our capital the eggs are extremely prominent in the centre, as would be expected in archaic work. Towards each volute they thin down, and as they pass round the sides they are flattened into mere reliefs, naturally enough. But what seems new is the circumstance that



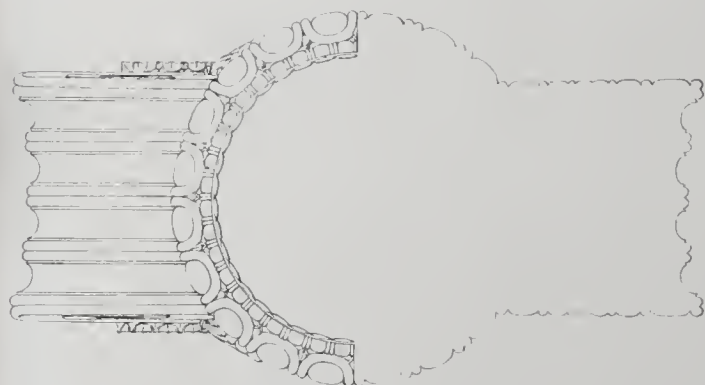
FRONT



SIDE



TRANSVERSE SECTION



HALF PLAN LOOKING UPWARD

HALF PLAN THROUGH VOLUTE

# CAPITAL AND BASE

FROM THE

## ARCHAIC TEMPLE OF DIANA AT EPHESUS



CONJECTURAL RESTORATION  
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the cord, or spira—if that is its name—which encircles the eggs is at the sides made to continue up over the cushion in two parallel lines, so as to suggest that this may have been the oldest manner of decorating the cushions of Ionic capitals. I noticed something similar last spring at Delphi on one of the very few archaic Ionic capitals found there by the French. At all events, we have here a simple and intelligible motive for the decoration of the cushion. The Samos capital has disappeared. We know it only from drawings (*Ant. of Ionia*, I. ch. 5, pl. 6), and we sympathise with Dr. Puchstein in his *Memoir on the Ionisches Capitell* (p. 28) when he says that “to find it again and to bring before our eyes the “style of Rhæcus, the old architect of the Heræon, would be a noble service.” But there is



FIG. 9.—ARCHAIC EPHESIAN CAPITAL IN THE BRITISH MUSEUM.

some compensation, if I may say so, in our having recovered what may be called a twin brother to it in the archaic Ephesian capital.

Part of another capital having the same archaic character of convexity in the canalis of the volutes instead of concavity, as the name implies, was found several years ago at Locri, in Southern Italy.\* There the eye of the volute takes the form of a rosette. I may mention also a small capital in the British Museum from the Temple of Artemis Eucleia at Athens (Inwood, *Erechtheion*, pl. 24), which, again, has the convex canalis, together with a rosette, in the eye of the volute. But this specimen seems to me rather archaistic than archaic.

In both the Samos and the Locri capitals the spiral of the volute starts away from the abacus at an abrupt, disagreeable angle, whereas in the Ephesus capital it moves in a continuous line; and this, perhaps, is evidence of a later date for the Ephesian capital.

We possess also part of an uppermost drum, with its astragal moulding and very shallow flutings, and a considerable part of another drum, from which the number of flutings for the

\* This is published in the *Mittheilungen der Arch. Inst. Rom.* v. p. 196. It may be well to compare also the angle

fragment from Selinus in Hittorff, *Arch. Ant. de la Sicile*, pl. 19, fig. 7.—A. S. M.

whole column may be reckoned. More curious, however, are several other archaic fragments which indicate different types of capitals on the same temple: in one instance the volute, instead of having spirals, is entirely occupied with a huge rosette, in striking contrast to the later Ionic, where only the eye of the volute is occupied by a small rosette. But there are two or three more of these fragments which remain a puzzle: one of them retains vivid red colouring. Among the fragments of Ionic bases from the archaic temple we have several types, differing from those of Samos (*Ant. of Ionia*, I. ch. v. pl. 2) and Locri (*Mittheilungen der Arch. Inst. Rom.* v. pp. 187, 188) in respect of the lower member, which in these latter instances consists of a cylindrical plinth, with slight convex mouldings, instead of deep scotiæ, as at Ephesus; and in respect also of the upper member, which at Ephesus varies considerably in the character of the flutings, in one instance being, indeed, ribbed instead of fluted horizontally. A small base in the British Museum, which was found at Naukratis, is probably the oldest Ionic base in existence, and it also is characterised by the cylindrical form of its lower member. Apparently the line of development had been from a simple cylindrical plinth to the deeply cut lower member of the later age. But whether I have been right in placing the archaic sculptured drum on one of these bases seems to me now open to doubt. It may equally, as in the later temple, have rested directly on a square, sculptured pedestal.

In this bare and brief statement you will, I trust, recognise that where I have indulged in speculation as to the general aspect of the temple, I have done so without any pretension to strictly architectural knowledge, but solely to convey to you the idea in my own mind, trusting implicitly to your indulgence. On the other hand, there are three points on which I firmly believe up to now: first, that the sculptured drums rested directly on the square sculptured pedestals as we have placed them in the Museum; secondly, that the pedestals were sculptured on all four sides; and, thirdly, that these sculptured pedestals could not have stood on the stylobate without producing an extremely disagreeable effect. In the second row of sculptured columns I would have liked to introduce Ionic bases which would range with the bases of the fluted columns along the sides; but that seemed more than questionable unless we were to do the same for the front row, which, in my judgment, is impossible. There I must leave the subject.

#### DISCUSSION OF DR. MURRAY'S PAPER.

PROFESSOR AITCHISON [*F.*], A.R.A., said that the question of the disposition of the carved circular bottoms to the columns and the square pedestals had been a problem of the greatest difficulty to architects. But of late years, at any rate since Fergusson's death, the restoration of the classic buildings of antiquity, one of which was now before the Meeting, had not engaged the attention of architects as of yore. It was a curious thing that so little contemporary description of this splendid temple, one of the seven wonders of the world, was known. There was the short account in Pliny; there were a few words in Pausanias, a few in Strabo, and a few in Vitruvius; and it certainly looked as if none of them had seen the temple, though it was impossible to say that they had not; but still it was spoken of, as if it were merely hearsay, that it was one of the most magnificent temples in the world. He had listened with great interest and admiration to the Paper, which showed the elaborate pains and

attention that its author had given to the subject, and he had watched for years the extreme ingenuity Dr. Murray had displayed in fitting the various fragments of the archaic base together. He (the speaker) had not studied the subject, and it would be impossible, if not impertinent, for him to offer any further remarks. He should like to be permitted, however, to move a very hearty Vote of Thanks to Dr. Murray for what he had done, and for bringing the results of his labours before them.

PROFESSOR T. ROGER SMITH [*F.*] feared he could do very little more than thank Dr. Murray for the learned and extremely interesting Paper with which he had favoured them. It had always seemed to him (the speaker) that the recovery of the Temple at Ephesus which Mr. Wood had effected was a kind of triumph for British archæology, and one of which they ought to be extremely proud. The Germans and the French and the Italians had excavated in many places, but there



had been few things in which the acumen of the original investigator, and the pertinacity with which he pursued a scent that might very easily have led him astray, and the sagacity with which he avoided being led astray, had been so strongly marked as they were in his case. The Institute was greatly indebted to the Keeper of the Antiquities at the British Museum for the pains and care with which he had brought together the remains entrusted to his charge, and it was extremely interesting to find that Dr. Murray had been able to elucidate so many points that Mr. Wood had left unsettled, and which it was not possible for him to settle. One might hope that it was still reserved for an investigator at some future time to discover on the site further specimens; and if that should be the case he had very little doubt that in the main they would bear out the views that Dr. Murray had placed before them. It seemed quite certain that the circular shafts stood upon square pedestals, as had been shown, and it was extremely likely that they stood without the elaborate moulded bases which Fergusson desired to attribute to them.

MR. R. PHENÉ SPIERS [F.], F.S.A., was afraid the observations he had to make would be rather of a negative character. Some five or six years ago, when he was called upon to revise Fergusson's *History*, he found himself placed in a very singular dilemma. The original account which Fergusson had given of the Temple of Diana was in the edition of 1875, and at that time the plan he had adopted did not differ very materially from that put forward by Wood—the only difference being, if he remembered rightly, that Fergusson placed four of the sculptured columns in the pronaos, whereas Wood placed two in the pronaos and two in the posticum. In 1883 Fergusson read another Paper before the Institute, in which he put forward such singular propositions that he (the speaker) felt it would be unsafe to put them before students as showing actually the arrangement of the temple. Fergusson happened, as he, in fact, stated in his Paper, to have hit upon the happy thought that 3 times 9 were 27; consequently if he placed three rows of columns—nine in each row at the back of the temple—he would arrive at the 127 which were quoted by Pliny. He was also very glad, he stated, to arrive at that idea, because it gave him the opportunity of lengthening the temple, and thereby of introducing two open courts through which he might light the temple. They were aware, of course, that a subject of great interest in his life was the way in which the Greek temples were lighted, and sometimes, as in the Parthenon, he put clerestory windows to the side; but whenever he could find the opportunity he preferred to have an hypæthrum. The lengthening of the temple enabled him to put one at each end of the cella. But the idea of nine columns at one end seemed to

be so impossible that he (the speaker) thought it would not do to put it before students as a reasonable restoration. He therefore contented himself—and he thought discreetly—with reproducing all that Fergusson had said before, and referring the student to the Paper read in 1883. Dr. Murray had stated that he had no great claim to architectural knowledge, but it was quite certain that his claim in that respect was very much greater than Fergusson's in respect of the pedestals; for if they took the trouble to make an elevation of Fergusson's design, taking it from the plan, or even a longitudinal section through the rear portico, it would be seen at once how impossible it was to arrange the pedestals as Fergusson had shown them. In the rear of the temple Fergusson placed his square pedestals on two different levels—namely, at the foot of the steps and on the upper platform. In both cases he raised his sculptured drums on the top of the pedestals, so that he had to descend twice to get down to the level of the ordinary bases of his other columns. Possibly, foreseeing these difficulties, Fergusson had contented himself with giving a cross-section through the temple and the flights of steps on each side where neither the square pedestals nor the sculptured drums troubled him. In this cross-section of Fergusson's the cornice of the raised platform he suggested, and through which he carried his steps, runs at the same level as the upper mouldings of the square pedestals placed as Dr. Murray had shown them. The fact that the pedestals were sculptured on all four sides was the most important piece of information Dr. Murray had brought before them, and it was substantiated by the reasonable restoration he had made, in which the pedestals in front were of the same height as the platform or podium at the side. There remained, therefore, only a difference in height between the sculptured drums and an ordinary Ionic base; and he (the speaker) agreed that there was no necessity at all to put a base underneath the sculptured column.

SIR HENRY HOWORTH, K.C.I.E., M.P., said he had been much interested in the discussion and in the most admirable Paper which had been addressed to an audience nearly all of whom were specialists. He, as a Philistine, and representative of the few Philistines present, had been most delighted, not only with the fulness of matter, which they expected from Dr. Murray, but with the excessive modesty with which the whole had been presented. It was impossible for anybody to realise from the Paper the immense amount of pains, trouble, and care he had taken to elaborate the specific history of the temple which concerned his subject; and the same modesty was shown also in the conclusion. If he might for the moment forget himself, and adopt the attitude of a German professor who was obliged, by the very necessities of his position, to find some new theory



in order to justify his existence, he should like to say a few words. With reference to the Ionic column: in the earlier stage they had the very primitive column without any flutings; in the second they had it with very rude flutings, but still with distinct flutings. Now it was a remarkable fact that at that very time the introduction of flutings apparently into both the Ionic and Doric columns was already spread over the Greek world, and one was led to inquire, How came it and whence was it that that revolution took place in the history of that wonderful feature in Greek architecture? It seemed to him that a little side light might be thrown upon the problem of how those columns stood if the question were approached from the side of the Egyptian temple. He should have said that that would have been an immediate key—would probably have explained the matter completely—but for one or two difficulties which presented themselves to his mind. He thought that the subjects on the square pedestals were incongruous with the subjects on the round drums which were planted above them in the reconstruction in the British Museum. He could not see the smallest trace of a square base on the many coins that he had examined to try and make out the construction of the sculptured columns. They seemed to him to be circular right down to the ground, and it seemed to him also that the great Italian painters when they painted the Beautiful Gate of the temple designed it from their idea of what Pliny meant. It was really formed of those sculptured columns directly upon the ground, and not upon great, tall bases. They would, however, understand that it would be the greatest impertinence on his part to raise any issue with his friend Dr. Murray, except, of course, for the purpose of getting him on his feet.

Mr. G. A. T. MIDDLETON [A.] said he had followed Dr. Murray with conviction, so far as the facts he had mentioned were concerned; but there were some few fragments in the British Museum which he had not mentioned, and one of those was of peculiar architectural interest, namely, the Corinthian capital on an elliptical base. He should like to ask Dr. Murray whether, in his very careful examination of these remains, he had been able to come to any conclusion as to where that Corinthian column was placed. It was unique, of course, in being upon such a peculiarly shaped base—elliptical and not circular. Another question he should like to ask—and fortunately he had been able to ask him privately when he happened to meet him in the Museum recently—was this: There were, as was well known, upon the uncut eyes of one of the volutes in the Museum certain centre points and scratchings: had these ever been really carefully worked out in the endeavour to discover how the volute was originally described? Dr. Murray had answered him in the affirmative

as to their having been several times carefully drawn and worked, but in the negative as to the discovery of the manner in which the volute had really been struck. Now if that were the case, there was still an opportunity of comparing with another example, for in the British Museum there was another Ionic capital, with an uncut eye upon which centre-points were to be seen, and that he had had the pleasure of showing Dr. Murray. It was a small Ionic capital from the Propylæum of the Temenos of Athene Polias at Priene, now in the Mausoleum Room—quite a small thing—and the centre-points were themselves so small that they would escape casual observation; but his attention was first drawn to them under the powerful electric light, which, of course, threw a dark shadow into the hollows. Looking the second time in daylight, he had been able to find them without any delay. They were perfectly clear upon one of the eyes. They were not to be seen easily upon the other, but Dr. Murray said that in all probability he would be able to find them there on cleaning.

Mr. H. HEATHCOTE STATHAM [F.] thought they might congratulate Dr. Murray on having brought before them a more probable and a more logical explanation of the part which the square sculptured pedestals played in the temple than had ever been offered before. For himself, ever since the late Sir Charles Newton showed him on the top of those square blocks the circular drip-mark of the torus, he had had the most absolute conviction on the subject, and he never had the slightest doubt that the square pedestals supported a column. Dr. Murray seemed to have found, by providing a lower platform near the bottom steps, a place for the square pedestals by which they could support a column of the same proportions as the inner row which would stand upon the upper step. It seemed to him (the speaker) by far the most probable solution that had yet been afforded them. There was one interesting point in the remains that they had never had an explanation of yet, and which Dr. Murray had touched upon, and that was the one circular sculptured drum which was 3 inches thicker than the rest. It was a very curious consideration as to what part of the temple that could have belonged. Dr. Murray suggested that in consequence of its width they might imagine it to have a greater height. He also referred to it as being possibly at the angle of the temple. Of course, to put an increased width in a column at the angle of the temple was a perfectly natural and frequent device, though to go to the extent of 3 inches would be a great deal. But he should be rather inclined to think that the angle position was the explanation of that. At all events they could hardly imagine where that column could have come if they were to suppose it to be of a different height

from the rest. There was another point about that sculptured drum: if he remembered rightly, it showed signs of being a great deal more weather-worn than the rest. [Dr. Murray signified that such was the case.] That would be some indication of where it stood—at all events, an indication that it stood in a more exposed position. When those who were interested in the subject were able to see what was at present in the basement of the Museum, and which would be brought up eventually, they would find a most interesting object in that archaic Ionic capital from the older temple which had been referred to, which had differences of the most peculiar and unexpected nature from the normal Ionic capital; and he was quite sure that they would admire very much the ingenuity with which it had been put together from the very small actual remains which there were. The remains were pieced up with it, but they were so very small that it was really quite a feat to have put together the capital in the way that had been done. Dr. Murray, in passing, had used one expression which recalled to him an idea he had often had before. He spoke about the late Roman coins, and said they were more valuable in regard to what they showed than to what they omitted. Now, in looking at coins for the light they were able to throw upon ancient architecture, it was extremely important to remember that what the medallist put in was, in fact, all that was of any value; what he omitted need not be considered; for this reason: a man engraving a building upon a coin—for instance, a man putting the Temple of Ephesus on an Ephesian coin—desired to make it recognisable, and he did so as far as he could within the limits of his space, and the possibilities of engraving on a small scale. Therefore, whatever they found on the ancient coin they might be certain there was some reason for. What a man left out might be to save himself trouble. Any feature to be found in an ancient coin professing to represent a building of a certain city was almost overwhelming proof that something of that sort was there; because otherwise the man who made the coin would never have given himself the trouble to put it in. That, he thought, was sometimes a little forgotten in estimating the value of evidence from ancient coins. One other remark he wanted to make. It was not quite correct to say that Mr. Wood was never misled. Mr. Wood showed a great pertinacity and perseverance, and never knew when he was beaten; but the fact was that he looked for the temple for six years on the wrong side of the city, although the literary evidence that it was on the other side was quite accessible. THE PRESIDENT said he had listened, as they had all done, with the greatest delight to the amount of information given in the Paper, and the extremely clear and admirable way in which

Dr. Murray had expressed his views. He himself had not studied particularly the Temple at Ephesus. He had been in that city, but only for two or three hours. It enabled him, however, to demolish one of the grounds upon which Fergusson had offered to support his theory of the nine columns. He said that it was obvious that it might have had nine columns because on that side there was a hill which entirely intercepted the view of the temple. He did not remember his exact words, but that was the gist of his argument. Now, it so happened that there was no hill at all, or not enough to interfere with the view of the temple. There was, indeed, Mr. Wood's excavation hill, or spoil-bank it might be called, when one was down in the bottom of the diggings—down at the pond which now occupied the place of his later excavations, which hindered one looking from east to west—but there was nothing in the nature of a hill when the ground was all clear, so that the question of the nine columns could not rest in any way upon the nature of the situation. He thought that Professor Aitchison and those who had followed him had given some extremely suggestive points to reflect upon.

DR. MURRAY [H.A.], in responding to the Vote of Thanks, said that he valued very highly the opinion of architects, and indeed owed a great deal to them in the course of his official work—to old friends such as Professor Aitchison—for their advice and encouragement, and much also to some of the younger men, whom he saw now so frequently in the Museum. He thought a great change from older times was noticeable. If they went through the galleries on a Saturday afternoon they would find not a few of these younger men drawing and measuring there. He did not remember that sort of thing until within the last few years. That reminded him of the question Mr. Middleton had asked about the elliptical Corinthian capital. He had not attempted to utilise that capital, because he did not see that it belonged necessarily to the temple. He did not find the least evidence that it did. Mr. Wood found it on the site, it was true; but the building to which it belonged they could not at all guess. Sir Henry Howorth, he was afraid, he could not answer; but he was prepared to read his Paper over again to Sir Henry privately. What Mr. Statham had said about the coins was very true and very just; but it was possible also that a coin of Hadrian or of Antoninus Pius, showing the front of the Temple at Ephesus, and struck possibly in Rome or in Alexandria, or some great minting place, might have been taken, not directly from the temple by some one who knew it and drew it, but from one of those numerous shrines of Diana that were sold to pilgrims; so that the coins might represent in some respects a considerable change from the original temple.





9, CONDUIT STREET, LONDON, W., 21 November 1895.

## CHRONICLE.

### THE EX-PRESIDENT.

#### Presentation of Mr. Macvicar Anderson's Portrait.

Prior to the delivery of Dr. Murray's Paper on the Temple of Diana at Ephesus, Sir Arthur W. Blomfield, A.R.A., formally presented to the Institute a Subscription Portrait of the ex-President, Mr. J. Macvicar Anderson. Sir Arthur was Chairman of the Special Committee appointed by the Council, in furtherance of what they believed to be a widely spread wish, to obtain the portrait in recognition of Mr. Anderson's untiring zeal and valuable services rendered for so many years as Honorary Secretary and ultimately as President. The other members of the Committee were Mr. Aston Webb, F.S.A., Vice-President, Mr. A. E. Street, M.A., and Mr. Emerson, Hon. Secretary. A statement of the account and the names of the subscribers will be issued in due course; and meanwhile the proceedings at the presentation of the portrait are here given.—

MR. PRESIDENT, LADIES, AND GENTLEMEN,—It has become my pleasing duty, as the representative of a large and an enthusiastic body of friends and subscribers, to present to the Institute the long and anxiously expected portrait of our valued friend and ex-President, Mr. Macvicar Anderson. If I did not know Mr. Anderson's modest and retiring nature, which would make the sound of his own praises embarrassing, if not actually painful, I could wish that he were present here this evening, that you might have the opportunity of at once critically comparing the well-known form and features of the living man with those of his counterfeit presentment delineated for us by the gifted painter, Mr. Charles Furse, whose unavoidable absence I very much regret. He was obliged to go to South Africa to recruit his health and strength after successive attacks of illness, which were the chief cause of the delay in finishing the picture. I sincerely trust that he may return in the spring in renewed health and vigour. As for the picture now before us, I venture to predict that it will henceforth be regarded as one of the most interesting and valuable

of the many similar memorials of former Presidents which adorn these walls.

I began by saying that the duty which I have the honour of being called upon to perform this evening is a pleasant one, and I am sure no one will doubt the very great pleasure it affords me to be permitted to undertake such a duty on such an occasion. But the task, though pleasant, is not without its difficulty. The deep debt of gratitude which the Institute owes to Mr. Anderson is in itself an element of embarrassment, because it makes it hard to refer adequately to his splendid services in the Presidential Chair, throughout more than the usual period of office, without far overstepping any reasonable limits of time, and saying a good deal which might sound in the ears of a stranger very much like the language of hyperbole. I will be content with reminding you—though any reminder is, I am sure, unnecessary—that the services to which I refer were not merely great, not merely exceptional, but in many respects altogether unique and unprecedented; so that in such matters as regular and punctual attendance at Council and other meetings of all kinds, and generally in self-sacrificing and indefatigable devotion to all the multifarious cares and duties of his responsible and anxious office, Mr. Anderson (if I may use a familiar colloquialism of the day) may be truly said to have triumphantly broken all previous records and to have hopelessly distanced all competitors. Whether his own remarkable record will ever be beaten in the future yet remains to be seen, but it may safely be predicted that should such an unlikely feat ever be achieved, it can only be by an individual who is (to use another equally expressive colloquialism) “a regular glutton for work”; and I wish to draw your attention, ladies and gentlemen, for one moment to the fact that, in alluding to the possible future record-breaker, I carefully guarded my character as a prophet by saying “individual” and not “man”; for do not the signs of the time warn us, or on such an evening as this let me rather say “allow us, to indulge in “the hope” that by that time the President of the Royal Institute of British Architects may be a lady? But this, I am afraid, is quite an unwarrantable digression!

Speaking of Mr. Anderson as pre-eminently a worker, we must not forget that, to his great achievements in that respect, he added several qualities for lack of which many men fail conspicuously when they aspire to be leaders of men of any grade or in any sphere. Our ex-President possessed the tact, judgment, and firmness necessary to steer us well, on many occasions, through troubled waters and stormy weather, and over hidden shoals and quicksands, and to bring us out of critical and difficult situations with flying colours and unimpaired credit and honour. Of the charm of his attractive social qualities and of



his great personal influence, always exerted for some good purpose and in the most genial manner, it can scarcely be necessary for me to remind you. Rather let me sum up by recalling to your memory those beautiful lines of Wordsworth in which, speaking of a fine and estimable character, he describes him as one

Who comprehends his trust, and to the same  
Keeps faithful, with a singleness of aim;  
And therefore does not stoop nor lie in wait  
For wealth or honours, or for worldly state.

It now only remains for me, in the name of the subscribers, to ask the President to accept on behalf of the Institute this portrait of its ex-President, Mr. Macvicar Anderson, which I now have the honour to present.

The President, Mr. F. C. Penrose, F.R.S., replied as follows:—

SIR ARTHUR BLOMFIELD, LADIES, AND GENTLEMEN,—It is with very great pleasure that I, as President of the Institute, accept this extremely beautiful gift, this admirable portrait of our ex-President. It is impossible for me to add more to the suitable words you, Sir Arthur, addressed to the Institute; and therefore I will confine myself to returning on behalf of all of us, I am quite sure, our most hearty thanks to those who have contributed in offering for our acceptance this record of a President who will always be remembered as one of the most indefatigable and useful workers that have yet presided over the Institute.

## THE INTERMEDIATE EXAMINATION.

### Probationers who have become Students.

At the General Meeting of Monday, the 18th inst., the President announced that an Intermediate Examination to qualify for registration as Student had been held on the 12th, 13th, 14th, and 15th inst., and that of the fifty-one Probationers (including sixteen relegated from previous Examinations) who applied, forty-two had been admitted, all of whom presented themselves and were examined. Of these, twenty-two passed, and twenty were relegated to their studies. The twenty-two, placed by the Board of Examiners in order of merit, are:—

- BUSBRIDGE: Harold [*Probationer* 1892]; 96, Herbert Road, Plumstead, S.E. [*Master*: Mr. J. Wallis Chapman].  
HARVEY: Frederick Milton [*Probationer* 1893]; 169, High Street, Gorsestons [*Master*: Mr. J. W. Cockrill\*].  
LEE: John Stevens [*Probationer* 1893]; 78, Comeragh Road, West Kensington [*Masters*: Messrs. John S. Lee & Sons].  
ALDWINCKLE: Thomas Wilson [*Probationer* 1894]; "Saratoga," Dacres Road, Forest Hill, S.E. [*Master*: Mr. T. W. Aldwinckle\*].  
BATTLE: Henry Arthur [*Probationer* 1894] (Auckland, N.Z.); 10 Keimore Grove, East Dulwich, S.E. [*Masters*: Messrs. A. & C.\* Harston].  
ILLINGWORTH: Herbert Edward [*Probationer* 1893]; Laurel Bank, Rawdon, near Leeds [*Master*: Mr. W. Carby Hall\*].

- DUTHOIT: John Frederick [*Probationer* 1892]; 6, Claremont Place, Dover [*Master*: Mr. W. J. Jennings].  
SHIPWAY: George Walter [*Probationer* 1893]; 2, Pilkington Road, Peckham, S.E. [*Master*: Mr. W. M. Brutton].  
KEIGHLEY: Alfred Ralph [*Probationer* 1892]; 35, Peel Street, Liverpool [*Master*: Mr. Edmund Kirby\*].  
BARRON: Ernest Henry Alderson [*Probationer* 1892]; 16, Townsend Crescent, Mannamead, Plymouth [*Master*: Mr. H. J. Snell].  
ROSS: Walter Gray [*Probationer* 1893]; Surrey House, Surrey Road, Norwich [*Masters*: Messrs. G. J.\* and F. W. Skipper].  
CHARLES: Ethel Mary [*Probationer* 1893]; 63, Gloucester Place, Portman Square, W. [*Masters*: Messrs. Ernest George\* & Peto].  
CHESNEY: Samuel [*Probationer* 1892]; 7, Baylie Street, Stourbridge [*Master*: Mr. Benjamin Baker].  
MARTINSON: Matthew George [*Probationer* 1893]; Greenfield, Bellingham, Northumberland [*Masters*: Messrs. Plummer\* & Burrell].  
BRYER: Alfred [*Probationer* 1893]; 1, Carlyle Villa, Ealing Park, Brentford [*Master*: Mr. Rowland Plumbe\*].  
ELLIOT: Norman [*Probationer* 1892]; South Villa, Lampton, Hounslow [*Master*: Mr. R. C. Murray].  
KING: Edward Vincent [*Probationer* 1893]; 13, Hexham Street, Bishop Auckland, Durham [*Master*: Mr. E. P. Peterson].  
LACEY: Arthur Ernest [*Probationer* 1894]; 44, Appach Road, Brixton Hill, S.W. [*Master*: Mr. Arthur J. Lacey].  
McMICHAEL: Gerald [*Probationer* 1892]; Clarendon, Cowleigh Road, North Malvern [*Master*: Mr. W. Hawley Lloyd].  
MAYNARD: Dudley Christopher [*Probationer* 1893]; 42, Chapel Park Road, St. Leonards-on-Sea [*Master*: Mr. Frank H. Humphreys\*].  
SAWYER: Frederick John [*Probationer* 1893]; 12, Sudeley Street, Brighton [*Master*: Mr. J. G. Gibbins\*].  
WRIGHT: Henry Knowles [*Probationer* 1892]; Earlsleigh, Groby Road, Bowdon, Cheshire [*Master*: Mr. Charles Heathcote\*].

The asterisk (\*) affixed to a name denotes a member of the Institute.

A selection from the Testimonies of Study submitted by three of the above named for admission to the Intermediate Examination was exhibited during the evening. The three sets of Testimonies from which the selection was made were those of Mr. Harvey, Mr. Busbridge, and Mr. Chesney, thus placed, as far as such Testimonies are concerned, in order of merit; and it may be useful to add that each set of Testimonies consisted of eleven sheets (half double elephant) of drawings and an illustrated essay.

## STATUTORY EXAMINATION.

### The London Building Act 1894, sect. 140.

At the same General Meeting, the President announced that a Special Examination had been held on the 7th and 8th inst., under the provisions of the London Building Act, for the purpose of examining one candidate—the only applicant at the October Examination—who passed, viz. Mr. Harold Griffiths, of the London School Board Offices, Victoria Embankment; and that he had

been granted by the Council of the Institute a Certificate of Competency to act as District Surveyor in London.

The late M. Echernier [Vol. II. p. 665].

Monsieur Louis Roguiat, the Secretary of the Société Académique d'Architecture de Lyon and a Member of the Société Centrale des Architectes Français, in Paris, has addressed to the President, Mr. F. C. Penrose, F.R.S., the following courteous communication:—

J'ai donné lecture à la Société Académique d'Architecture de Lyon dans sa séance de rentrée du 7 novembre de la si remarquable et si bienveillante notice écrite par notre éminent membre-correspondant, Charles Lucas, sur notre très regretté Président d'Honneur Casimir Echernier, l'un des architectes les plus distingués de notre ville et l'un de ceux qui ont le plus contribué au développement artistique dans la ville de Lyon.

Vous avez bien voulu insérer cette notice dans le numéro du 19 septembre dernier du JOURNAL de l'Institut Royal des Architectes Britanniques.

La Société Académique d'Architecture de Lyon, vivement touchée par cet hommage rendu par une Société aussi éminente que la vôtre à l'un des plus aimés de ses membres, a décidé à l'unanimité d'adresser à l'Institut Royal des Architectes Britanniques l'expression bien sincère de sa vive reconnaissance et de sa bien affectueuse confraternité.

The late John William Trounson F.R.S.

Mr. J. W. Trounson, who died at his residence in Penzance on the 8th inst., at the age of forty-six, was the son of Mr. John Trounson, builder, of Penzance. He had an extensive practice throughout West Cornwall, and had carried out some important works, including the mansion of Boskenna at St. Buryan; the additions to St. Peter's, Newlyn; the Jubilee Memorial extension of St. Paul's, Penzance; the new Wesleyan Chapel at Penryn; Pike's Hill Wesleyan School, Falmouth; the Bible Christian Schools, Heamoor; various Board Schools in Cornwall; Messrs. Chudleigh's premises at Johannesburg; and the recently opened extension of the Penzance Wesleyan Day Schools. He was elected a Fellow of the Institute in 1888.

Owners of Stone Quarries near Penrith and Illicit Commissions [p. 19].

A well-known Fellow of the Royal Institute of British Architects, practising in Manchester, has received an autograph letter addressed to him personally, as architect, on the 11th inst., from 45, Mill Street, Penrith, as follows:—"Dear Sir,—We beg to state that our traveller had the "pleasure of calling upon you, leaving a sample "of our Barbara Plain Quarry Stone, same as was "used on the outside of Rylands' Building, Deansgate [Manchester]. If it should meet with your

"approval, and you would like to specify it, our "terms of commission to you would be 5 per "cent. We should be glad to hear from you at "any time. Yours truly, W. FORRESTER." The gentleman to whom this questionable—only the editor of *Truth* knows how to use the proper adjective in such cases—and impudent proposal was made complains of the annoyance caused by the receipt of letters of the kind from tradesmen; and he cannot help thinking, he adds, that they must derive encouragement from a few members of the architectural profession, or they would hardly dare to send such letters.

Monsieur Frantz Jourdain.

The author of *L'Atelier Chantorel*, a copy of which he kindly left at the Institute with a complimentary note of "hommage sympathique" to British Architects from their "devoué confrère," paid a short visit to London a few weeks before the opening of the current Session; and therefore did not receive, as he would otherwise have, that attention which the architects of this country are always anxious to show their brethren of France. But M. Jourdain may rest assured that his book—which, though a romance, is by no means unfitted for an architectural library, since it treats of an architect's *atelier*—will be thoroughly appreciated by those of his British colleagues who know Paris and have had practical experience of French education in its various forms. Needless to add that the respect entertained by M. Frantz Jourdain for the Ecole des Beaux-Arts and the Institut de France is not so profound as that cherished by some of the architects of the United Kingdom.

Additions to the Library.

*The Carvel Stones of Islay*, by Robert C. Graham [Glasgow: James Maclehose & Sons]; *Egypt in Decorative Art*, by W. M. Flinders Petrie [London: Methuen & Co.]; *A Digest of the Law of Light*, with an Appendix of Statutes, Forms, Plans, by Edward Stanley Roscoe, third edition [London: Reeves & Turner]; and the *Contractors' Price-Book* for 1895, containing about 250,000 prices, by Edward De Vere Buckingham [London: Biggs & Co.] have all been received from their respective publishers.

*Fonts de Baptême romans de Tournai*, by M. L. Cloquet, an article originally contributed to *La Revue de l'Art Chrétien*, and now published in pamphlet form, has been presented by the author.

The New York illustrated monthly entitled *The Engineering Magazine* for November (vol. x. No. 2), which has been received, contains a very notable article, by Mr. H. H. Statham [F.], on "Contemporary English Architects and their Works"—one which treats topics of professional interest with remarkable freedom, not to say boldness; and it is almost needless to add that the illustrations, like most of those executed in the United States, are excellent.



Professor Aitchison [F.] has presented a Tract by a learned German—*De Artificibus Monachis et Laicis mediæ ævi, scripsit Antonius Henricus Springer*. 4to. Bonn, 1861—and written a characteristic letter on the subject treated therein. Herr Springer's Tract, which is in Latin, contains, besides other most important particulars, a letter of Eginhard (Charlemagne's secretary) asking the meaning of certain words in Vitruvius; and also the names and works of many mediæval architects and artificers, both cleric and lay.

## REVIEWS. XXXIII.

(93)

### SIXTEENTH-CENTURY WORK IN INDIA.

*The Moghul Architecture of Fathpur-Sikri: described and illustrated by Edmund W. Smith, Archaeological Survey, North-Western Provinces and Oudh. Part I. Fo. 1894. Price 20 Rupees. Allahabad: Govt. Press, N.W.P. and Oudh. [London: W. H. Allen & Co.; Kegan Paul, Trench, Trübner & Co.]*

This volume is welcomed as the first instalment of a more complete illustration of a single important group of Indian sixteenth-century buildings than it has hitherto been possible to publish. For though archæological survey work has been carried on in India for a good many years, the surveys in Northern India, under the late General Sir A. Cunningham, could not be regarded as architectural. Monumental archæology was of little account with him in comparison with epigraphical and numismatic antiquities; and though—in the numerous volumes prepared by himself and his assistants—there are many drawings of mouldings and other details, there is little architectural treatment: enough, it may be, to show the period to which a monument belongs, but scarcely more. It is most desirable that we should have as complete architectural drawings of the more famous buildings in India as we have of those of France, Italy, and other Western countries; and among these the Muhammadan architecture, in Upper India especially, presents some splendid examples. Every traveller in India is familiar with those at Agra, Dehli, and Fathpur-Sikri; and many visit a place so unique as the latter in its history, architecture, and present condition. Finch, to whose account Mr. Smith refers in his preface—and which would have added interest to the volume had he copied it in full—visited Fathpur-Sikri in the time of Jahângir (1605–1627), and describes it as follows:—

At 12 c. [kos] from Agra is seated the famous citie of Fetipore, built by the Acabar, and inclosed with a faire stone wall, which yet standeth fresh, hauing foure faire and strong Gates, it being some three English miles betwixt gate and gate. In the midst it is all ruinate, lying like a waste desert, and very dangerous to passe through in the night, the buildings lying wast without inhabitants; much of the ground beeing now conuerted to Gardens, and much sowed with Nill [*indigo*] and other graine, that a

man standing there, would little thinke he were in the midst of a citie.

As related in the *Tabaqât-i Akbari*, the city owes its origin to Akbar, the greatest sovereign of his race, who used to visit a devotee—Shaikh Salim Chishti—who lived near the village of Sikri. On returning from the siege of Rantambhor, in April 1569, he left his army on such a visit, and as his twin sons by the sister of Raja Bhagwandâs had both died in 1564, he consulted the Shaikh about future issue, and was cheered by the prognostication that he should soon have a son who would live. Accordingly the Princess Jodh Bai was sent to Sikri to be confined in the Shaikh's house, where Prince Salim, afterwards the emperor Jahângir, was born 31st August 1569. The emperor, at the instigation of the devotee, then founded a city, calling it Fathpur ("City of Victory"), but to distinguish it from other towns of the name it is known as Fathpur-Sikri; and indeed the walls—some seven miles in circuit, built round the city—enclose the village of Sikri, lying to the north-east of Akbar's palace and the modern town. Akbar seems to have intended this place as a country residence, to which he could at any time retire for rest and recreation from the official seat of his government at Agra, which is only twenty-three miles distant. And for the next fifteen years he was often here. The palace was completed in 1571, at the same time as that at Agra, and the other buildings were then in progress or followed in quick succession. The great mosque, the glory of the city,\* the author of the *Tabaqât-i Akbari* says grandiloquently but with some justice, is "a fine mosque, which at the present day has no equal in the world." The Amîrs, he adds, "also built houses and mansions for themselves," and "the

\* Finch calls it "the goodliest Meskite of the East," and adds:—"It hath some twentie foure or thirty steps of ascent to the Gate, which is one of the highest and fairest (I suppose) in the whole world: on the top are a number of clustering pinnacles, curiously disposed. The top of the Gate may be plainly seene eight or tenne miles distance. Within is a goodly spacious court, very curiously paved with free stone, about sixe times the largenesse of Londons Exchange, with faire large walks amongst the side, more then twice as broad, and double the height of those about the Burse of London, the pillars of vpholding them, beeing of one intire stone: and round about are entrances into many goodly roomes, neatly contriued. Opposite to the Gate toward the further side, stands a faire and sumptuous Tombe, artificially inlaied with mother of Pearle, and inclosed with a grating of stone curiously carued. Ouer head is rich pargetting and paynting. Herein lyeth the body of a great *Kalender*, at whose cost the whole Meskite was builded. Under the court yard is a goodly Tanke of excellent water, none other being to be had through the citie, but brackish and fretting, by drinking whereof was caused such mortality, that the Acabar, before it was quite finished, left it, and remoued his seat to Agra, so that this goodly Citie was short liued, in fifty or sixty yeares space beeing built and ruinate."—J. B.



"Emperor made Fathpur a royal abode, raised a stone fortification round it, and built some splendid edifices, so that it became a great city."

From the fact that all the buildings—as remarkable themselves as anything of their class in India—belong to one short period of about thirty years, and so distinctly bear the impress of Akbar's mind, and that they have survived the storms of three centuries in such a state of preservation, Fathpur-Sikri affords the unique example of a city \* much in the condition in which it was first built and occupied by the great Moghul emperor and his court. In the architecture of the buildings, as Fergusson remarked, "a strong feeling for Hindu art prevails throughout, and the whole is stamped with that bold originality which marked every act of the great man to whom they owe their origin. The palace has no pretension to be regarded as one great architectural object; but, as a picturesque group of elegant buildings, it is unrivalled."

Such a group of buildings was well worthy the fullest attention of the Archaeological Survey, and in 1889 Mr. E. W. Smith, the architectural assistant in the North-Western Provinces, was directed to make as full a delineation as he might find practicable of whatever was important, architecturally or artistically. It was thought better every way to survey such a group as this with some approach to finality than to spend time and expense on going over a large area imperfectly, surveying a building here and there. Mr. Smith, with a small staff of draughtsmen, has since then spent parts of four cold seasons on this work, and he has materials for four volumes, of which this is the first. It deals with about ten of the buildings belonging to the palace group: the three succeeding parts are to illustrate in order—Rāja Bir-bal's palace, Jodh-Bāi's; the great mosque, the tombs and gates; and the remaining religious buildings.

This volume or "Part" contains 126 plates, of which 87, or three-fourths, are measured drawings—plans, sections, mouldings, and details; 7 of coloured ornament; 13 are excellent reproductions of photographs by electrogravure; and 19—some of them coloured—are from remains of paintings on the walls: for Akbar contrary to Muslim prejudice and teaching—delighted in painting, and encouraged the representation of living beings and of scenes in which they act. Aurangzeb the bigot, his great-grandson, destroyed

the elephants at the gate of Fathpur-Sikri, and not improbably caused the paintings on the palace walls to be obliterated. Such fragments as are traceable Mr. Smith has carefully copied, and they will be found of much interest.

The value of this work lies in these numerous and careful drawings, which afford a full representation of the buildings surveyed and of the marvellous richness of their details; for among them is the Rūmi, or so-called Turkish Sultānālī's house, justly regarded as one of "the richest, most beautiful, as well as the most characteristic of all Akbar's buildings." This and Bir-bal's house, adds Fergusson, "are small, but it is impossible to conceive anything so picturesque in outline, or any building carved and ornamented to such an extent, without the smallest approach to being overdone or in bad taste." To give to the world an accurate series of drawings of such buildings is a service to the history of art for which the Government concerned deserves the highest credit.

Dr. Führer has contributed an introductory chapter, all too brief, on Akbar and his reign; and Mr. Smith then—without any descriptive account, such as we might naturally expect, of the general lie of the buildings with reference to one another, or any help to this except a general ground-plan on a small scale—proceeds at once to describe the Mahāl-i Khās, or court in front of the so-called Khwābgah. Nor is this defect compensated for by the separate ground-plans of the buildings; the general plan, being on a scale of about 265 feet to an inch, does not sufficiently individualise them, and that of the Mahāl-i Khās (Plate I.) only gives part of the court. A plan of the whole block of buildings between the "Office" and Diwān-i Khās, measuring about 180 yards by 120, to a scale of 50 feet to an inch, would be a very great help, and might be given in the next Part. It would further have been an improvement if Mr. Smith had given his principal drawings to a larger scale, as in the volume on Jaunpur. The central portion of the elevation and the section on Plate II., for example, might have been given with advantage to a scale of 10 feet to an inch; the elevation of the 'Ankh Michauli is crowded into a small part of Plate XCVII. among large details; the others are much better. The other buildings here illustrated are the Rūmi Sultānāh's house, the Panch Mahal, the Diwān-i Khās, the so-called astrologer's seat, the 'Ankh Michauli, and Maryam's house.\* The plates themselves must be studied in

\* Even here the Public Works officer has, it is said, been detrimental:—"An engineer was sent to Fathpur-Sikri to make some repairs, and for reasons best known to himself built up" the private doorway "which gave the emperor access to his Record Office, and enabled his prime minister to visit him without public observation. At the same time he built up open-work screens in another building, where blind screens had been before and—*vice versa*—removed a staircase from one part of a palace to another for no sufficient reason."—J. B.

\* Mr. Smith speaks of "Miriam," though (at p. 31) he states that the Jodh Bāi, or Princess of Jodhpur, was called Maryam-uz-zamāni ("The Mary of the Period"). She was the mother of Salim, afterwards Jahāngir. She died in May 1623; and the *Tuzuk-i Jahāngiri* expresses a hope "that God will receive her in His mercy," for Jahāngir's mother, though a Hindu, could not well "be sent to hell."—J. B.

order to obtain a clear idea of the wealth and richness of the ornament here detailed. Doubtless the succeeding instalments of this work will add even more valuable materials to these.

With this work before him, the student of architecture and Oriental art may judge what a wealth of further information would be afforded were a few other groups of buildings, such as those at and round Agra, Dehli, &c., similarly surveyed and delineated, while like surveys were made at Abu, Tanjor, Worangal, and elsewhere in the Peninsula. This would be the proper outcome of the surveys if they are allowed to proceed. But statements appear now and again in the Indian newspapers that Government meditates the early closing of the surveys. They altogether cost a very trifle, that might easily be saved without loss of efficiency in any of the larger and older departments of expenditure. But the influence of the survey is so small, its officers are so poorly paid, and are outside "the services," that aid may be withdrawn from it without a thought of its value or a murmur of official sympathy for its staff.

If Government now ceases to assist, all effective survey work must stop, and amateur curiosity-hunters will be free to destroy as before, until influence can again be brought to bear on the Indian Government, as in 1870, to start afresh, when a new staff will again have to be trained for the work. Our Societies interested in Oriental research have no funds, and could never by any possibility raise the means to do such work. While France, Germany, and America have their State-supported archæological institutes at Rome and Athens, it has been with no small difficulty, even aided by the highest patronage, that we have got a modest school for such study set up at Athens. But Greece would be little more than a collectorate in India; and Indian research, however important in itself and for India, can never hope to obtain the hold on the world of art and letters that Athens has rightly won and must keep.

On the importance of continuing the surveys, Professor G. Bühler has recently contributed an important paper to the *Journal of the Royal Asiatic Society*,\* indicating in the briefest form some of the results already attained, and some special objects for immediate prosecution. It naturally lays stress on the epigraphical side of the work, but the monumental side is of no less importance, and such progress has already been made in this that, after a few more years of vigorous work, under even the present limited staff, sufficiently supported, we might reasonably expect the publication of much work now in progress, and a fuller classification of the monuments of the whole of India.

The immense importance of this subject and the unequalled interest of the architecture and history

of our Indian empire impose upon us a duty in urging that the surveys be not broken up until the work now so fairly beginning to produce such important results be more fully entered on and developed.

Edinburgh.

JAS. BURGESS.

(94)

#### A NEW ARCHÆOLOGICAL QUARTERLY.

*The Reliquary and Illustrated Archæologist: A quarterly Journal and Review, devoted to the study of the early Pagan and Christian Antiquities of Great Britain; Mediæval Architecture and Ecclesiology; the development of the Arts and Industries of Man in the Past Ages; and the Survivals in Ancient Usages and Appliances in the Present. Edited by J. Romilly Allen, F.S.A. (Scot.). New Series, Vol. I. Small 4o. London. 1895. Published quarterly, price 2s. 6d. [Bemrose & Sons, Ltd., 23, Old Bailey, E.C.; and Derby.]*

Although the full title of this new archæological "quarterly" constitutes in vulgar parlance a somewhat large order, it is impossible to overlook the fact that its publishers have spared neither pains nor money to produce a work of exceptional appearance from an artistic point of view, and of undoubted scientific value. The four parts of the first volume just completed contain excellent papers, admirably illustrated from photographs and pen-and-ink sketches by the processes now in vogue, some of the latter being gems of reproduction. The principal contributions are signed by their respective authors, and for the unsigned matter the distinguished editor is obviously responsible. He, by the way, is in no mood to tolerate flippancy or disrespect on the part of any one in the treatment of archæological matters; and he is even hard on the witty Dean of Rochester—who may yet wear the mantle of his holy predecessor of St. Patrick's—because the Very Reverend Reynolds Hole prefers to look after living bodies rather than the skins of dead Danes, once nailed, it is said, to the great door of his cathedral. Nor is the editor of *The Reliquary* kinder to architects who, during this century, have had a good deal to say about a noted mausoleum attached to a name which they have been wont to spell Halicarnassus, but which he spells—the gods forgive him!—"Helicarnagsus."

Among the contributions which may most interest the working architect are "A Survey of 'the Existing Remains of the Priory Church of 'the Holy Trinity, Micklegate, York,'" by Mr. Walter Brook, of York; "The Roman Thermæ of 'Fiesole,'" by Mr. Leader Scott, F.S.A.; "The 'Church of Santa Maria dei Miracoli, Venice,'" by Mr. Harold Hughes; and "The Old Crosses 'of Somersetshire,'" by Mr. Alex. Gordon. Some of the "Illustrated Notes" are capital reading, and of value to the practical man of the present, as well as to the antiquarian student of the past. A bibliography, which is given in the April number, of archæological publications issued during the previous twelve months, though by no means an

\* July 1895, pp. 649-660. See also a letter by Mr. W. F. Sinclair on the same subject, pp. 662-665.—J. B.



innovation, is extremely useful, divided as it is into different heads or classes with the authors' names in alphabetical order under each.

Architects other than Mr. Hughes [A.] are contributors to the new journal, among whom is Mr. Arthur Baker [F.], R.C.A.; while the name of the late Mr. Loftus Brock [F.], F.S.A., appears in the "Illustrated Notes" as having contributed a drawing, therein reproduced, of the key of a church chest at South Creak, Norfolk. The volume is now in the Institute Library, and both contributors and editor, as well as the publishers, may be congratulated on the results of their year's work.

WILLIAM H. WHITE.

## NOTES, QUERIES, AND REPLIES.

### THE HOME DISTRICT. [Vol. II. p. 666.]

#### Cambridge: A Possible Centre of Education.

Until the formation of an Architectural Society for the counties of Cambridge, Huntingdon, Norfolk, and Suffolk, of which the City of Cambridge might be the centre, these counties form part of what is known as the Home District of the Institute, and are so described in the *CALENDAR*. From inquiries recently made of members resident in the respective localities, it appears that in Cambridge the only classes suitable for intending architects are some held at the Technical Institute, in which Mr. T. D. Atkinson [A.] gives instruction. He does not, he states, touch on the artistic or the historical side of architecture; and as his pupils at present consist entirely of young working men from builders' yards, he does not attempt either the theory of Construction on the one hand, or actual manual skill on the other, but has to hold a middle course and take such points as he thinks working men should know. There are two classes a week—Wednesday and Thursday—during the six winter months, from about 7 till 9 p.m.; and on the former evening Materials are treated, on the latter Construction, such as roofs, floors, &c. On Wednesday the teacher lectures, on Thursday he instructs in drawing. The fee for the whole course is five shillings, which admits also to a Geometry class on Tuesday evenings. Further, there is a class in Carpentry, which is described as actual work.

To judge from the foregoing description, no one can blame the City of Cambridge for extravagance in the matter of one branch of technical education; and it is probably due more to the goodwill and energy of Mr. Atkinson that such classes as those described are held at all than to any municipal yearning for the improvement of second-rate education among the people of the great University town. Architecture, or, to be more correct, High Art, in its higher and highest flights has been treated by the University of Cambridge, and is,

perhaps, still being so treated there. The same may be stated of the University of Oxford. But it may yet be a cause of astonishment, say in the early years of the next century, that two of the most renowned homes of learning in the world should have possessed no Chairs of practical architecture even as late as 1895—in other words, that in England in the nineteenth century architecture was neither regarded as a learned study nor as an occupation for learned men.

#### Suffolk.

Ipswich possesses Schools of Science and Art in which classes are conducted of the following description:—Practical, plane, and solid Geometry; Building Construction (elementary and advanced), and Carpentry and Joinery (practical) in connection therewith; Applied Mechanics; Modelling (elementary and advanced), including Ornament; Modelling and Design; Principles of Ornament; Architectural Design. Any further information respecting these classes may be obtained from the Hon. Secretary, Mr. Frank Woolnough, at the Ipswich Schools.

#### Norfolk.

Norwich has a School of Art, in which, it is stated, young men can improve their knowledge of architecture. As the famous Castle in that city has recently been converted into a vast museum—of which it forms the central building—it may confidently be expected that the municipality will soon take steps to utilise the means at disposal for the establishment of an architectural curriculum, which may become a centre of education for architects and handicraftsmen in Norfolk. A pamphlet descriptive of the new museum is in the Library of the Institute.

### LEEDS AND YORKSHIRE DISTRICT.

The following particulars of the educational facilities offered to architectural students in the district of the Leeds and Yorkshire Society, which has a library and organises lectures at its headquarters in Leeds, have been supplied by Mr. Francis W. Bedford [A.], Hon. Secretary of the Society:—

#### Leeds.

##### THE YORKSHIRE COLLEGE (VICTORIA UNIVERSITY).

*Mathematics; Physics; Chemistry.*—The lecture courses are:—1, General course of chemistry; 2, inorganic chemistry, 1st year; 3, ditto, 2nd year; 4, organic chemistry; 5, ditto, honours course; 6, theoretical chemistry; 7, chemical physics; 8, chemistry as applied to coal-mining; 9, agricultural chemistry; 10, elementary chemistry. Also practical course in sanitary chemistry, &c.

*Geology. Courses:* 1, Geology; 2, practical geology; 3, agricultural geology; 4, geology applied to sanitary and civil engineering.

*ENGINEERING DEPARTMENT.—Elementary Engineering:* Elementary graphical principles; representation of forces, velocities, &c., by lines; resolution of forces; resultant of systems of parallel and inclined forces; funicular polygon. Application of graphical methods to the determination of



the forces acting on simple structures, such as cranes, sheer-legs, suspension chains, roof trusses, &c.—Calculation of areas, volumes, weights, surfaces, moments of forces, centre of gravity, &c.—The strength of materials; stress, strain; properties of iron, steel, copper, and alloys at high and low temperatures (illustrated by demonstrations on the 100-ton testing machine); bolts, screws, chains, ropes, timber, &c.—Elementary treatment of beams, rolled joists, and simple girders.

*General Engineering*, more particularly mechanical.

*Civil Engineering*.—Surveying, levelling, &c.

*Advanced Civil Engineering*.—Limes, mortars; Portland cement; manufacture, tests, inspection, specifications, strength, setting properties; slag cement, Roman cement; concrete: mixing, cost, methods of placing; foundations: piles, fascines, caissons, cylinders; lateral pressure of earthwork, retaining walls; masonry arches: line of thrust; arched ribs: in cast iron, wrought iron, and steel.

*Surveying*, including field work.

*Architectonic Construction*. A course by Professor Goodman on one day a week.—Strength of materials used in architectural construction: cast iron, wrought iron, steel, timber, stone, bricks, brickwork, concrete, cement; strength of bolts, rivets, chains, ropes; design of riveted joints; strength of rolled joists, plate girders, beams of rectangular and other sections; strength of long columns, stanchions and columns loaded on side brackets; forces acting on roof trusses and braced structures; strength of retaining walls and pressure of earthwork; strength of arches. The lectures are illustrated by demonstrations on the 100-ton testing machine.

*SANITARY ENGINEERING* (Day Classes).—Wm. Spinks, A.M.Inst.C.E., lecturer.

*Hydraulics and Water Supply*, chiefly municipal.

*Road-making*.

*Diploma of Public Health*.—A course of twelve lectures: Sanitary building construction; sanitary appliances and plumbers' work; water-closets; outside closet systems; defective drainage; disconnection and ventilation of house drains; ventilation and cleansing of sewers; sewage disposal works.

**ART.**—I. Freehand drawing and decorative design for textile students; II. Sketching from natural objects, and freehand, for engineering and other students; III. A course of general art study; IV. A course of design for the decorative arts. The latter class is intended for all who wish to study decorative design as an aid to practical ornamental work of different kinds, such as embroidery, wood-carving, leather and metal work, modelling, architectural ornament, decorative painting, &c.

*Evening Classes* are held in all the subjects already given. The sanitary engineering course includes a series of twenty lectures on "House Sanitation" as follows:—Sanitary law: the Public Health Act; the Model Bye-Laws. Sanitary building construction: soils and sites; prevention of damp; superstructure; calculations of areas; cubic space; air space inside and outside the house; warming, lighting, and ventilation. Sanitary appliances: water-closets; urinals; outside closets; baths; lavatories and sinks. House drainage: planning and arrangements of drains; discharge and flow of pipes; methods of construction and materials; ordinary and specially jointed pipes; manholes and inspection chambers; flushing and cleansing; disconnection and ventilation; disposal of sewage from isolated houses.

LEEDS SCHOOL OF SCIENCE AND TECHNOLOGY (LEEDS MECHANICS' INSTITUTION).

*Practical, Plane, and Solid Geometry; and Graphic Statics*.

**BUILDING CONSTRUCTION.** *Elementary Course*.—Brickwork: different forms of bond, arches, cornices, &c. Masonry: various kinds of walling and methods of con-

necting stones. Carpentry: construction of floors, trussed partitions, and roofs. Plumbing: flashings, ridges, hips, valleys, gutters, and lead flats. Slating: roofs covered with duchess and countess slates on boards and battens. Ironwork: cantilevers, beams, skeleton diagrams of roofs. Joinery: doors, windows, and finishings generally.

*Advanced Course*.—Nature of stresses on cantilevers; fixed beams; best forms for struts, ties, and beams subject to transverse strains; nature, application, and peculiarities of various kinds of bricks, stones, cements, limes, timber, cast and wrought iron, and steel; construction of brick and ashlar walls; stone and wood stairs; fire-proof floors; drains; iron and wood roofs up to 60 feet span; fixing of architraves, linings, &c., to walls.

*Geology*.—Teacher, Mr. J. Tate, F.G.S.

**PLUMBERS' WORK.**—*Preliminary Course*:—(1) Mensuration of circle, square, and other figures; also of cylinder, cone, prism, &c.; simple problems in plane figures and curved surfaces, with special reference to the cutting out of sheet lead for covering dormers, &c.; making plans, elevations, and sections of various details in plumbers' work. (2) Effect of heat on solids, liquids, and gases; frost-burst and its prevention; action of heat in causing motion in liquids and gases; ventilation of pipes; thermometers. (3) Density of various metals used in plumbing; properties and composition of various alloys, such as brass, gunmetal, &c. (4) Solders: composition, preparation, and uses; fluxes, their action and uses; various methods of soldering. (5) Workshop appliances: principles of their action; valves used by plumbers; syphons and traps; workshop practice: marking off and cutting out sheet lead.

*Ordinary Grade*.—(1) Relative strengths, under various pressures, of lead, cast iron, wrought iron, and copper tubes. (2) The nature and uses of seamless lead pipes, tin-lined pipes, and sheet-lead pipes. (3) The physical and chemical properties of lead, zinc, iron, tin, and copper; composition and properties of red lead, litharge, white lead, &c., and the cements made from these materials; purposes for which lead or zinc in construction can be more usefully employed; the action of various waters—such as hard, soft, sea, and mineral—on lead and other metals used by plumbers. (4) The principles of hot-water circulation for domestic and other purposes, including cylinder, tank, and steam heaters, &c.; various kinds of boilers and taps, their advantages and disadvantages; materials used in valve seatings, packing, &c.; the systems in use for the prevention of furring of pipes and boilers, radiators and coils in common use; general principles of conduction, convection, and radiation. (5) Sanitary appliances in common use; water-closets, their fittings and supply, water-waste preventers, baths, lavatories, sinks, &c.; action and construction of automatic valves—such as tidal, back-pressure, alternating, and reducing; varieties of traps; momentum, waving out and syphonage of traps, and methods of preventing the same. (6) The multiplication of power by water pressure, as illustrated by hydraulic press; pumps: construction and uses of different kinds of pumps, hydraulic ram, &c. (7) Drains, their size, materials, and construction; connection of drain with sewer; disconnections, trapping, and ventilation of soil-pipes and drains; workshop practices: bending pipes from 2 inches to 4 inches diameter, jointing lead pipes. More advanced exercises in lead bossing.

*Advanced Grade*.—(1) Different qualities and properties of water from deep wells, shallow wells, springs, &c. (2) Setting out and construction of house drainage with disconnecting and inspection chambers, gully, interceptor, and other traps; ventilation of drains, fresh-air inlets, cowl, &c.; drain-testing, viz. by water, smoke, and chemical substances; disinfectants and their application, their corrosive action on fittings. (3) Sanitary appliances, their arrangement and position in dwelling-houses, hos-

pitals, and public buildings; advantages of various sanitary fittings in common use; methods of automatically removing grease from traps; automatic fittings for flushing latrines, public conveniences, &c.; entry of tidal, storm, and other waters into basements of buildings. (4) Inlet and exhaust ventilation for rooms and dwelling-houses; systems of mechanical ventilation and methods for washing and purifying air; electrical and water-driven fans and motors used for ventilating purposes. (5) Heating by hot water and steam, high and low pressure, and hot air; amount of heating surface required for rooms and buildings of different sizes; principles of hot-water circulation. (6) Preparation of specification and drawings, and taking out of quantities for plumbers' work. (7) Those parts of the various Public Health Acts dealing with sanitation of dwellings, &c. (8) Gasfittings, measurement or pressure of gas in a main or pipe; gas meters, wet and dry, forms of burners, gas valves, gas reflectors. Workshop practice: jointing and bending pipes, making traps; further and more difficult exercises in lead bossing, lead burning.

**CARPENTRY AND JOINERY. Ordinary Grade.**—(1) Nature and properties of the various kinds of wood in carpentry and joinery, with the parts and places from which they are obtained; methods of seasoning and preservation of timber; strength of timber; mode of planning and converting materials, so as to avoid waste and shrinkage and obtain the maximum strength or stiffness. (2) Tools: their names, shapes, uses, &c.; labour-saving machinery. (3) Mechanical drawings as applied to carpentry and joinery. Plans, elevations, and sections of simple solids; drawings, full size, showing shoulder lines, &c., on the material before it is cut; and the various joints in carpentry and joinery; setting out rods, working drawings of panelled and framed and braced doors, door frames and casings, double-hung sashes, sliding and hanging shutters; French casements, double-hung sashes, sliding and hanging shutters; folding shutters and boxings, rebates or linings for swing doors, &c. (4) A general knowledge of the proportions of stiles, rails, muntins, &c., in doors and windows, heights of rails in doors to suit knobs or latches, the usual sizes of doors, windows, &c., and the kind of material and strength to be used. (5) Mouldings, their forms and names; intersection of mouldings at different angles, also of straight and circular mouldings; enlarging and diminishing mouldings; lines for determining the sections of moulded bars and hip-rafters in skylights and lanterns; method of determining the true section of raking mouldings over square or oblique plans, also when the given moulding is on the rake. (6) Bevels; finding bevels for hip-rafters, jack-rafters, purlins, splayed linings, raking mouldings, and oblique work generally. Also a knowledge of the method employed to place bevel lines direct upon the work. (7) Newel and geometrical stairs; proportion of riser and tread; general planning of stairs to clear windows and other obstacles, and to obtain proper head room; method of finding the proper position of windows and diminished fliers; general construction and methods of support. (8) Mechanical principles: the principles employed in framing roof trusses, timber partitions, trussed girders, bracing large doors, gates, &c.; drawings to scale of the same, showing the comparative strain in different parts by means of parallelogram of forces; fixing and striking large centres, &c. (9) Methods of strengthening beams. (10) Various kinds of joints. (11) Various kinds of hinges and methods of applying. (12) Plumbing and slating.

**BRICKWORK AND MASONRY. Ordinary Grade.**—(1) Bricks: the names, nature, and properties of the various kinds of bricks in general use and the purposes for which each kind is specially fitted; the mode of preparing and tempering the clay, moulding and burning the bricks, and testing the quality. (2) Precautions to be adopted in excavations

in various soils; mode of laying drain pipes, ventilating sewers, and the general principles of sanitary science. (3) Lime: nature and properties of the different kinds and their use; cement: method of making and means of testing; sand: the relative advantages and disadvantages of pit, river, and sea sand; proportions of the above for making good mortar; concrete: its ingredients, method of preparation, and uses. (4) Foundations: the width and height of the footings required for walls of different thicknesses; damp courses: the materials used for these and their practical purpose; air-bricks: the best method of ventilating underground floors; dry areas and the method of constructing them and keeping them free from wet. (5) Bond in brickwork; plans of alternate courses at the angle of walls of different thicknesses, showing English and Flemish bond: raking bond; bond at acute and obtuse angles. (6) Brick walls with stone facings; hollow walls, the methods of constructing and bonding them; plans of openings in the same. (7) The method of constructing fireplaces, coppers, and ovens; arrangement of flues; bond of chimney shafts; rendering, parging, and coring. (8) Arches: names and descriptions of the various kinds and mode of construction; bond in arches. (9) Paving. Pointing: the comparative merits and drawbacks of various kinds; proper composition of black mortar. (10) Tiling: pantiles, plain tiles, and the method of laying the same, and of finishing the gables, &c. (11) Stone: description of the various kinds of building stones and their characteristics: mode of distinguishing sandstones and limestones; reasons for preferring one to the other in various climates; stone suitable for internal work. (12) Description and explanation of the different stone-cutting tools. (13) Rubble work: ashlar; flint work; bonding stones. Precautions to be adopted in setting stones; mode of ascertaining natural bed; reason why this is important. (14) Quoins, copings, cornices; mode of hoisting large stones, and precautions to be observed in setting them; heads and sills; full-size drawings, showing the proper positions in various cases of joints, joggles, dovetails, tenons, &c. (15) Staircases: general construction and method of support; geometrical stairs and method of setting out the curves; landings, and means of supporting same when consisting of more than one stone. (16) Mouldings: names and descriptions and method of cutting the various classical mouldings, with their intersections. (17) Sketches of the various kinds of arches and description of their several parts. (18) The general mechanical principles involved in brickwork and masonry, the resistance to crushing, and the average weight per foot cube and per rod.

**Honours Grade.**—(1) Gauged brickwork; method of cutting and rubbing bricks, and the tools employed; method of forming ornamental strings, pilasters, plinths, &c., in brick, and the construction of circular and octagonal bays; terra cotta, and its application to buildings. (2) Vaulting; names and description of the various kinds and method of construction, illustrated by sketches; flying buttresses: their purpose and mode of construction. (3) Window tracery, generating lines, intersections of mouldings, position of joints, solid angles, &c.

#### THE LEEDS SCHOOL OF ART.

**Course of Instruction. Elementary.**—Freehand, model, brush drawing, geometry, perspective, light and shade from cast, modelling. **Advanced.**—Painting in oil and water colours, drawing and painting the figure from the antique and from life; modelling; designing. **Technical.**—Wood-carving; building construction; architectural design and drawing from measurement; designing for decorative and industrial art; modelling in clay; *repoussé*, &c.

**ARCHITECTURE.**—These courses for architectural students have only been formed this current year.

**Elementary Course.**—Freehand and outline from cast,



model drawing, plant drawing in outline; geometry, perspective; elementary light and shade; architectural history; principles of ornament; elementary design; modelling in clay: study from casts of ornament; building construction; drawing from actual measurement portions carefully selected from existing old buildings.

*Advanced Course.*—Sketching ornament, and shading in line and wash, antique or life; architectural history; architectural design: working out designs; ornamental design, modelled; principles of ornament; historic ornament; building construction, more advanced study; sketching in colours.

Special attention will be given to students preparing for the Examinations of the Royal Institute of British Architects.

*History of Architecture.*—(1) The Orders, Greek and Roman. The word "Order" as applied to architecture; its meaning as a combination of a column and its usual superstructure or entablature. This combination almost the only means of producing architectural effect employed by the Greeks, and the chief feature of Roman architecture. The term "Order" as possessing also a wider significance and extended to denote a style or manner in keeping with one of the varieties of column in use in classic times. The Greeks' use of the Orders Doric, Ionic, and Corinthian. The Romans' addition of two others, namely, Tuscan and Composite, so raising the number of Orders to five. Students are advised to make themselves familiar with the forms and general proportions of good examples of the Orders—both Greek and Roman—so as to be able to draw them from memory with correctness; but it is not required that the dimensions of the minute subdivisions of height and projection which are met with in books on the subject should be committed to memory. (2) Mouldings made use of with each Order; the capital considered as an index to each; the enrichments applied to the various mouldings, and the ornaments customarily made use of. Students to be prepared to draw some of the foregoing from memory. (3) Sources from which the Orders were derived, rudimentary and somewhat archaic forms in which they appear in early Greek work; the mode in which they were employed by Greek architects and by the Romans, including the way in which the latter combined arches with columns, and employed pedestals, thus variously extending the scope of the Orders; the use made by Renaissance architects and the variations introduced. From the first the attention of the student should be directed to the points of distinction as well as of resemblance between the Greek and Roman Orders, extending to the mouldings, enrichments, and ornaments, as well as the leading forms and proportions; and to the wide difference in architectural character thus created. (4) General knowledge; terms in ordinary use in architectural books, students to illustrate their answers under this head by sketches. (5) Gothic architecture as found in England and on the Continent, details, &c. (6) Buildings of architectural character—Renaissance, Mediæval, or Modern. Students to illustrate their answers, as far as possible, by sketches.

*Historic Ornament.*—(1) Prehistoric architectural and other ornaments and cognate forms in use among savage tribes. (2) Egyptian and Assyrian columns and appendages, mouldings, surface sculpture, and painting applied to architecture; sculpture on a colossal scale, metal-work, jewellery, wood and ivory carvings, furniture, pottery, textiles; manual arts as shown in illustrated books, and actual specimens at the British Museum and South Kensington. (3) Greek columns and appendages, mouldings, panels, acroteria; Etruscan and Greek sculpture of various periods, arms and armour, metal-work, ivory and gold statuary, jewel-work, gems and coins. (4) The same arts on a larger and more sumptuous scale under the Roman and Græco-Roman artists, from the days of Greek

independence to the age of Constantine. (5) Byzantine, Romanesque, Norman architectural decorative details: columns, capitals, &c., mouldings. Sculpture belonging to the same styles, mosaics, paintings, enamels, jewellery, engraved crystals and gems, coins, costume as seen in specimens in the British and South Kensington Museums and in illustrated books; the Byzantine influence on the decorative arts of Southern and Western Europe. (6) Mediæval architectural ornament: columns, capitals, mouldings, panels, spandrels, crestings, corbels, tabernacles, pinnacles, pendants, parapets, &c. Mediæval sculpture, painting, metal-work, arms and armour, enamelling, tapestries, textiles, mosaics, goldsmiths' work, wood and ivory carving from the twelfth to the close of the fifteenth century. (7) Revival of ancient learning in the fifteenth century, its influence on the architectural and sumptuary arts, on the decorative features of architecture and on all sumptuary arts, including majolica, lace, leather-work, and ornament in every kind of material. (8) Eighteenth century. Discovery of Herculaneum and Pompeii; return to Greek and Roman forms and decoration. (9) Ornamental details of the architecture of the East: of Persia, Japan, and China. The Saracenic architecture of Egypt, Syria, and Spain, and the Saracenic and other architecture of India. (10) Oriental sumptuary art as originating from Persia, with some Byzantine traditions. Damascened and wrought metal-work, pottery, painted and inlaid wares, textiles, &c. Figure and flower painting as elements of Persian decoration. Arabian art and the geometrical character of its ornament. Skill of Indian craftsmen in the arts of Persia. Indian goldsmiths' work, showing traces of Greek traditions. (11) Chinese and Japanese ornament. Jade and ivory carving, enamelling, porcelain, bronze casting on a colossal and on a minute scale; lac-work, block printing, silk and cotton weaving practised from remote times in China and Japan.

There is a Municipal Art Gallery and Public Library in Leeds. The Reference Library is fairly good, but not so good as the size of the city demands.

### Bradford.

#### BRADFORD TECHNICAL COLLEGE.

*ENGINEERING DEPARTMENT.* Subjects.—Testing laboratory; land surveying; advanced geometrical drawing; building construction; applied mechanics; graphic statics; practical draughtsmanship; calculation of weights and quantities; mathematics and mensuration; physics; workshop practice (woodworking).

*Woodworking.*—All students will work a set of exercises to illustrate the uses of the principal hand-tools employed in woodworking, such as: Marking out and sawing with ripper and cross-cut saws; use of bench planes, square, and gauges for planing stuff to size; use of square and marker in setting out; cutting to line with tenon and dovetail saws; use of chisels and gouges in paring, and of mallet and chisel in mortising; cutting tenons; use of moulding and bead planes, plough, fillisters, router, &c., in grooving, rebating, and housing; boring with brace and bits; cutting out sweeps, &c., with bow-saw. The student will be expected to work a set of 12 frames, introducing the most useful joints and connections employed by joiners, cabinet-makers, and pattern-makers, and a set of simple examples in wood-turning, to illustrate the uses of the various wood-turning tools.

*Graphic Statics. Section I.*—Triangle and parallelogram of forces; parallel forces and determination of reactions; examples of simple stress diagrams on Clerk-Maxwell's system; king-post truss, with variations of loading; table of weights of roof-coverings, wind pressure, &c.; stress diagrams for king- and queen-post trusses, right-angle strut, double strut, French, and pent-roof trusses; braced cantilevers; "saw-tooth" roof, and Bow's truss for wood; wind-pressure diagrams for king-post



truss and double-strut truss; safe working load for rafters, struts, tie-rods, &c.; design of combined wood and iron, and iron roofs from diagrams. *Section II*—Simple examples of trussed beams; trussed beam on incline; Warren girder with various arrangements of loading; bowstring and double-bowstring girders with various arrangements of loading, &c.

**BUILDING CONSTRUCTION AND DRAWING.**—A course of lectures of one hour each, followed by the working-out of practical details and examples (two hours).

**Brickwork.**—Terms used; walling; size of bricks; different bonds used; footings for brick walls; junction of walls; jambs of windows and door openings; arches over openings in external and internal walls; different forms of arch; gauged work, &c.

**Masonry.**—Classification of walls; parts of walls; footings, plinth, quoins, stringcourses, copings, corbelling, &c.; joints and connections; dressing thresholds, sills, jambs, lintels, &c.

**Carpentry.**—Details of joints and fastenings; construction of single, double, and framed floors; couple, collar, king and queen post roofs; ceilings and partitions.

**Founders' and Smiths' Work.**—Cast-iron girders, bressummers, and cantilevers; details of shoes, heads, rafters, struts, &c., for iron roofs.

**Slating.**—Names and sizes of slates; preparing, laying, and nailing slates; terms used, gauge, lap, &c.; eaves and ridge courses, formation of valleys and hips, rendering and pointing.

**Plumbers' Work.**—Laying sheets of lead on roofs and flats, ridges and hips, in valleys and gutters, &c.; horizontal and raking flashings, stepped flashings, soakers, &c.; formation of rolls, nosings, and drips, eaves, gutters, downpipes, &c.

**Joinery.**—Details of joints used, beading, moulding, shooting, scribing, rebating, ploughing, chamfering, &c.; framing and panelling; ledged, ledged and braced, framed and braced, and the different descriptions of panelled doors, door frames, and casings; windows with solid and cased frames; furniture for doors and windows.

**TESTING LABORATORY.**—The 100-ton Buckton vertical testing machine is capable of dealing with specimens:—(1) In *Tension* up to 6 feet long, plates, flat, square, or round bars, &c. (2) In *Compression*, up to 6 feet high and 9 inches by 9 inches cross-section, including cylinders of any metal, blocks of stone, cement, or concrete, bricks, struts or columns of cast iron, T, L, or channel iron or steel, pillars of wood, &c. (3) In *Shear*, including pin, riveted, and cotttered joints. (4) In *Bentling* or cross-breaking, up to 10 feet long between supports, 9 inches wide, and 18 inches deep, including beams and joists of wood, cast- and wrought-iron girders, rolled joists of iron or steel, &c. (5) In *Torsion*, taking specimens up to 2 inches in diameter and up to 12 inches long in part under observation.

**LAND SURVEYING.**—Description; method of using and adjusting instruments employed; Gunter's chain and arrows, offset staff, station poles, measuring tape, optical square and cross-staff, clinometer, &c.; field-book, with examples of entry, and plotting from same, &c. During the third term practical lessons will be given in the field, and a complete survey of a small estate, or large irregular field, with hedges, footpaths, &c., will be made.

In the *advanced engineering* course further lectures are given in building construction, carpentry, and joinery, &c., dealing to a great extent with materials; also in surveying and levelling, quantity surveying, statical construction, &c.

**ARCHITECTURE.**—Arrangements have been made to give a regular course of instruction in architecture, in conjunction with the Art Department, where the following subjects will be taught:—Freehand, model, and perspective drawing; light and shade; architectural drawing, and drawing from measurement; study of classic Orders; principal

features of the Renaissance and Gothic styles; and history of architecture.

*First Year.*—Subjects: Applied geometry; land surveying; perspective; arithmetic and mensuration; chemistry and metallurgy; building construction; lectures and practice in Art Department; applied mechanics; physics; workshop practice (woodworking).

*Second Year.*—Land surveying and levelling; perspective; applied geometry; building construction (advanced); lectures and practice in Art Department; strength and properties of materials; graphic statics; mathematics and mensuration; physics; testing laboratory; workshop practice (carpentry and joinery).

*Third Year.*—Testing laboratory; practical draughtsmanship and design; setting out work, staircasing, hand-railing, &c.; carpentry and joinery; lectures and practice in Art Department; graphic statics; elements of construction, stability of structures; specifications and quantities; sanitary engineering and plumbing.

Similar classes to the above in all the different departments are given in the evenings.

#### BRADFORD SCHOOL BOARD.

*Free Science and Art Classes*—drawing and building construction, mathematics, &c.—are held in the following schools in the evenings: Barkerend Board School; Belle Vue Board School; Bradford Moor Board School; Drummond Road Board School; Great Hoxton Board School; Lilycroft Board School; Ryan Street Board School; Undercliffe Board School; Usher Street Board School; Whetley Lane Board School.

#### BRADFORD CHURCH INSTITUTE.

*School of Science and Art.* Day and evening classes in drawing and painting, &c.

#### BRADFORD MECHANICS' INSTITUTE.

Similar classes to the above, including also building construction.

#### Castleford.

There is an Art Class in the town under the Science and Art Department. Only second and third grade subjects are taught. No technical instruction is given. Students find it better to go to Leeds or Wakefield.

#### Dewsbury.

##### DEWSBURY AND DISTRICT TECHNICAL SCHOOL.

*Physics:* Mr. H. J. Taylor, lecturer. *Building construction:* Mr. C. B. Howdill, A., lecturer. This course is similar to the one at the Leeds School of Art.

*Mathematics:* manual instruction in woodwork; wood-carving and *repousse* work; plumbing, which is a course similar to that at Bradford. The usual art course.

#### Huddersfield.

##### HUDDERSFIELD TECHNICAL COLLEGE.

*Mathematics.*—The syllabus includes arithmetic, geometry, algebra.

*Plane Trigonometry.*—Fundamental ideas; measurement of angles: relations between the measurements; the "trigonometrical functions," and their relations, &c. Logarithms: Their nature and use; proportional parts and interpolation; spherical trigonometry.

*Theoretical Mechanics.*—Velocity; acceleration; laws of motion; force; work, energy; parallelogram of forces; centre of gravity, levers, &c.

*Mechanics of Fluids.*—Fluid pressure, &c.

*Engineering Department.*—Subjects: Practical, plane, and solid geometry; geometrical drawing; building construction.

*Manual Training in Woodwork.*—The various tools; their correct use; methods of sharpening, &c.; various kinds of timber and their peculiarities; drawing joints; practical work at the bench.

*Physics Department.*—Sound, light, and heat.

*Hygiene.*—Air and ventilation; composition of air, both natural and as affected by artificial surroundings; amount of air necessary for each person; principles of ventilation.

*Local Conditions:* Soil and its drainage; aspect, &c.

*Art.*—Freehand, model, and perspective drawing; drawing from the cast; principles of ornament; designing; drawing from the antique and life; modelling, &c.

There is no free library in the town.

#### Halifax.

There are classes held at the Halifax Technical School in the following subjects:—Mathematics, physics, hygiene, plane and solid geometry, building construction, builders' quantities, and the usual art classes. I am informed that the above classes are of very little value to architectural students except for the Preliminary Examination; beyond this students have to depend upon Leeds, Bradford, or Manchester.

#### Harrogate.

In reply to inquiries I am informed that there are no facilities in Harrogate except those afforded by the local School of Art. These might be sufficient to enable students to pass the Preliminary Examination, and also the subjects in the Science Section of the Intermediate Examination, but the absence of a library makes it very difficult for students to pass in the Art Section. For these books, &c., students have to come to Leeds.

#### Hull.

The only means of education in Hull of service to architectural students are the ordinary science and art classes and the classes at the Technical School. The Hull Municipal Technical School has been founded this year, and commenced its first session on 9th September. Subjects: Building construction; carpentry and joinery. Students in the latter class must attend the woodworking shop one night per week for practical work. Tools and materials are provided. Engineering; physics; chemistry. At the School of Art the usual subjects are taught.

#### Otley.

The only classes at Otley which would be of any assistance in passing the Examinations are those in connection with South Kensington held at the Mechanics' Institute. These include building construction, plane and solid geometry, perspective, freehand, and model drawing.

A new Science and Art School is being built, on the completion of which, no doubt, additional classes will be instituted.

#### Pontefract.

Art Classes in connection with South Kensington are held at the Young Men's Institute and at the Mechanics' Institute.

A Building Construction class is held at the Town Technical School (King's School).

A course of twelve University Extension Lectures will be given at the Town Hall on "Ecclesiastical Gothic Architecture" by Mr. D. H. S. Cranage, M.A.

#### Wakefield.

The following classes are held at the Technical and Art School: Building construction; geometry; hygiene; mathematics; modelling in clay; plumbers' work; wood-work.

#### "Architecture for the Public" [p. 32].

From Professor BALDWIN BROWN [H.A.], M.A.—

I did not assume that Mr. Statham was not perfectly well acquainted with the Heraion find, but expressed surprise that he did not take it into account in discussing the question of the origin of

the Greek temple. I am quite prepared to leave it to the judgment of any one who has read the account of the Olympia explorations, whether or not what came to light there was "evidence" of the wooden origin of the colonnade. Taken together with the statement of Pausanias, it appears to me to carry "evidence" almost to the height of "proof." Of course, if I accepted without qualification the canon that "the tendency is to thicker proportions as we go backward in time," I should not write as confidently as I do; but this canon only holds while we go back a certain distance—say to the early part of the sixth century B.C., when we meet with the massive and thoroughly stone-like structures like the Temple at Corinth or the Poseidon Temple at Pæstum. Dr. Dörpfeld, the only archaeologist of our times who has investigated the ruins at Corinth, pronounces them to be "of the sixth century or perhaps earlier," and the temple is classed as "severe archaic," that is, as belonging to the period when the style had developed its essential characteristics of a somewhat ponderous stateliness. There are some eight existing temples that are classed as belonging to an earlier group, and it is in these so-called "lax archaic" structures, like the other temple and "Basilica" at Pæstum, and notably the Heraion at Olympia, that we find the variations and experiments which mark a style not fully formed. Mr. Statham appears to admit that excessive diminution is not a stone-like feature, and this is specially marked at Pæstum, Assos, and Metapontum. The Heraion is generally reckoned the oldest temple of which we have substantial remains (about 700 B.C.), and its proportions are rather light than solid. The wide spacing of its columns and of those of some other buildings is a point in favour of a wooden origin, as it assimilates them to the temples of old Italy, where the timber character is still more pronounced.

Mr. Statham will no doubt say what he thinks of these arguments, but I do not think it would be of advantage to carry the controversy any further, as we are neither of us likely to convince the other. The whole question requires more space for its proper discussion than can be spared in the JOURNAL. As the problem of the origin of mouldings really depends on this wider one, I shall not say more on it here, save that I do not quite follow Mr. Statham when he pictures the Greeks as arriving at the mouldings by chamfering off the angles of their stones, for the Doric builders at any rate seem to have set considerable store on keeping these sharp and square. It is under the portico roof in the lacunaria, and under the topmost fillet of the cornice, that we get the best specimens of Doric moulded profiles; and these mouldings are inserted, in what seems to me a very carpenter-like way, into the angles between vertical and horizontal members.





## MINUTES. II.

At the Second General Meeting (Ordinary) of the Session, held Monday, 18th November 1895, at 8 p.m., Mr. F. C. Penrose, F.R.S., *President*, in the Chair, with 28 Fellows (including 11 members of the Council), 29 Associates (including 1 member of the Council), 3 Hon. Associates, and numerous visitors, the Minutes of the Meeting held 4th November 1895 p. 34 were taken as read and signed as correct.

Sir Arthur W. Blomfield [F.] A.R.A., presented, on behalf of the subscribers, the portrait of Mr. J. Macvicar Anderson, ex-President, painted by Mr. Charles Furse, which, having been unveiled, was accepted by the President on behalf of the Royal Institute.

The President announced that at a Statutory Examination held, under the provisions of Section 140 of the London Building Act 1894, on the 7th and 8th November, one candidate attended and passed—viz., Mr. Harold Griffiths, London School Board Offices, Victoria Embankment, E.C.—and that he had been granted a Certificate of Competency to act as District Surveyor in London.

The President further announced the results of the Intermediate Examination held on the 12th, 13th, 14th, and 15th November, and read the names of 22 Probationers [pp. 58, 59] who had passed and were now registered as Students. A selection of drawings from the Testimonies of Study submitted by Mr. Harvey, Mr. Busbridge, and Mr. Chesney was exhibited during the evening.

A Paper by Alex. S. Murray [LL.D., LL.D., F.S.A.] entitled *THE SCULPTURED COLUMNS OF THE TEMPLE OF DIANA AT EPHESUS*, was read by the author, and, having been discussed, a Vote of Thanks was passed to him by acclamation. The Meeting separated at 10 p.m.

## PROCEEDINGS OF ALLIED SOCIETIES.

### THE LEEDS & YORKSHIRE SOCIETY.

Extracts from the Opening Address of the Session.  
By E. J. Dodgshun [F.], President.

Delivered 11th November 1895.

Again through your great kindness I appear before you this evening, the opening of the twentieth session of this Society. A year ago it was my privilege to address some remarks to you, and to-night I may refer to some of them. . . . First of all, the Council are very much cheered by the efforts made by some of the students during the last summer, and it gives me the utmost pleasure to say how well deserved the medal and other prizes have been. . . . Besides these prizes offered by the Society, and which I am perfectly certain will help the student to understand and appreciate some of the difficulties of the profession of his adoption, there are other opportunities now open which should without doubt be embraced with deep thankfulness, and the student of to-day has many and tremendous

advantages which we of riper years did not enjoy in our youth: now, in every large centre, such as Leeds, Bradford, Huddersfield, Hull, Dewsbury, &c., there are schools of science and technology, with efficient masters and teachers, where classes are held, and where one may learn, if so disposed, many things which it is necessary an architect should know. Amongst other subjects brought before the attention of the student I may mention geometry and building construction, mathematics, applied mechanics, geology, botany, and plumbing. These subjects are taught in a thorough and practical manner, and in some cases you have the advantage of practising the practical part of these subjects, for you can actually learn how to use the tools and materials as our artisans do; you can learn to make a joint in a lead pipe, and much other plumber's work, to work at the joiner's bench, &c. You will agree with me it must be a tremendous advantage to know actually how things are made, what the capabilities of each material are, what a help it must be to know all this, why you can design in such a practical way; and you will by this acquired knowledge be able to make such splendid use of your materials that you can produce much you would never have dreamt of without this knowledge. The other day I had the pleasure of being shown through the Leeds School of Art, and I was very much struck with the many facilities there are for study, and my mind was disabused of certain ideas which I held with regard to art schools in general, and which I found out were very antiquated notions, and although correct many years ago are utterly wrong now. Through the courtesy of Mr. Haywood Rider, the Headmaster of the Leeds School of Art, I am able to give you the following particulars, which I think are not sufficiently recognised—at any rate not sufficiently used. A student can go through a thorough course of study and work in any department of the School for a nominal fee. There are classes for drawing, painting, modelling in clay, and casting in plaster, and wood-carving, besides building construction before mentioned. . . .

Whilst I am speaking to the students I should like to say I have been thinking of late how pleasant it would be if we could arrange, some time during the next summer, to have a week's sketching holiday in some part of the country, perhaps on the lines of the Architectural Association trips, and, if thought desirable, we could have our sketches reproduced by photo-litho or some other process, call them the Leeds and Yorkshire Architectural Society's "Sketch-book," and issue it to our Members, Associates, and friends at a price merely to cover the cost of printing, &c. If from year to year we could publish one sketch-book each year, I am sure it would prove extremely interesting, and sometimes very useful, besides being a record of valuable work done. I think we could induce two or three members of the Society to join in such an expedition, and they would materially help the younger students by advice and guidance, without, I trust, in any way interfering with the liberty and freedom of choice of any. Think of it, and if you consider the idea good, I shall be very glad to meet you and make the necessary arrangements. Another pleasing thing I have to record, and one which will be especially welcome to those of us who depend on our practice for our sustenance, is the undeniable fact of a great revival in trade generally. Now, we architects are always the last to benefit by a revival in trade; but we have the pleasant and certain fact to look forward to, and our turn will come. Another pleasing thing I have to tell you is this, the Society is still in a flourishing condition. Long may it continue to be so! Of course a Society of this nature cannot for ever be on the increase; we cannot expect to be constantly adding new members to our rolls; and if we keep up the number we have, and as the Report shows we do, it should be considered satisfactory. . . .

Well, gentlemen, last year I ventured to make some

rather stringent remarks with reference to certain grievances which I consider exist in connection with the Building Bye-laws Committee, and at that time I was almost tempted to believe I should awaken such a response that we could not fail to obtain some consideration at the hands of the Committee. What we did get was an acknowledgment from them of the receipt of a communication from our Secretary, and I began to think the matter would end there—to me, personally, a great disappointment, as I felt quite sure if we had made our wants known in a more persistent manner some good result would have followed. Perhaps we were a little fearful of giving offence, and in consequence worded our requisition so mildly that the Committee possibly thought we were only half-hearted and really did not feel there was much the matter; recently, however, I am glad to say, I have received an intimation that the questions then raised, or some of them, are to be taken into consideration very shortly. Gentlemen, what I urged last year is still, in my opinion, of the utmost importance, and I heartily hope the matter will be taken up at no distant date and carried through, with the effect of putting the case on a better and more agreeable footing. I think, however, it is necessary we should get, not only the members of this Society, but every architect who is in business in Leeds, to combine—and even their clients, who very frequently have to suffer from delays and troubles caused by the action, and sometimes inaction, of the Committee and their officers—in order to make certain of the redresses we seek. I venture to think a combination such as I have suggested would prove so powerful that the Committee would feel obliged to pay attention to their representations, and from what the President of the Royal Institute of British Architects says in his Address, delivered the other night in London, we may reckon on the support of the Institute. At the request of the Council of the Royal Institute of British Architects we have had under consideration the Schedule of Charges at present in vogue in the profession. I was unable to be present at the meeting, but I am informed the observations on the subject have been forwarded to London. Your Council did not make many suggestions, and, with the exception of two or three alterations in the existing schedule, no further alterations were thought necessary.

Still I believe it will occur to some of us that the present method of payment is not always quite commensurate with the amount of work done: for instance, if 5 per cent. is a reasonable charge, and none of us like taking less, for preparing plans, &c., and superintending the erection of, say, a large mill or a huge block of warehouses, or a row of cottages, where there is a multiplicity of the same features, surely it is quite inadequate payment for a church or a good house, where every stone almost and every bit of joiner's work, to say nothing of the other trades, require the most careful thought and consideration in detailing. The other day, out of curiosity, I counted the number of drawings I had prepared for two houses with stables; there were 43 sheets, and the work of building had not commenced; so how many there will be by the time the houses are completed I will leave you to judge. The probable cost is £7,000, architect's commission £350. Now you might very readily build a mill to cost £7,000 and not have more than a dozen sheets of drawings; so it is quite clear if you had a big practice in mill building, you would make an income more easily than if you had an equal practice in house building of the class I have mentioned. In a city like Leeds, however, we probably get a mixed practice, and then one job may be fairly put against another, and so equalise matters. But then what about our clients? If we charge 5 per cent. for the mill we ought to have a larger percentage on the house or church. No doubt it is convenient to charge by percentage, especially as it has become a recognised custom; still, I think to stick to 5 per cent. for everything is not quite fair.

Recently your Council thought it their duty to criticise the conditions issued by the Leeds Poor Law Guardians of a proposed competition for imbecile wards to be built in connection with the workhouse, and we have forwarded a letter to the Clerk (which, by the way, I believe has not been acknowledged) pointing out certain clauses which we should like to see either excluded or materially altered, and which if allowed to remain will prevent many of us competing.

Amongst other things we suggested that too many drawings were required. We objected to the successful competitor having at his own cost to obtain a *bona-fide* tender from a builder to carry out the works at the architect's estimate, failing which the Guardians reserve to themselves the right to dispense with his services and pay him nothing, considering that a professional assessor is to be appointed who would no doubt be able to form a correct opinion as to the value of the work. We suggested that the designs should be sent in without any motto or distinguishing mark, and to be numbered on receipt in order to prevent identification. In another clause we read: "The Guardians do not bind themselves to adopt any of the designs sent in." This your Council considered should read: "The Guardians do bind themselves," &c. We also pointed out that the premium should not be deducted from the commission, as the competition involves work which should not be included in the 5 per cent., and other matters of less importance were also referred to. Mr. Penrose, the President of the Royal Institute of British Architects, in his Opening Address has much, well worth reading, to say with regard to competitions and the promoters of them, and I agree with him and others that it is not necessarily by competition that the best result is obtained. Mr. Penrose says: "It can hardly ever happen that any set of conditions and instructions issued by a committee can supply competing architects with all the information required for forming a successful plan at all comparable to the free intercourse of an appointed architect with his employers 'at the outset.'" Of course, it is hardly possible to dispense with competitions altogether; but I do wish every architect would absolutely decline to enter any competition where the conditions and instructions are unfair or incomplete. I have described some of the conditions issued lately by the Leeds Poor Law Guardians, and another local competition of recent date has turned out anything but satisfactory, and should be held out as an additional warning to us. In this case a limited number of architects were invited to send in plans, and each was remunerated to some small extent for his trouble; and although a professional assessor was called in and gave his award, the promoters coolly put it on one side and commissioned another architect, who was not a competitor, to carry out the work; a proceeding which I can only describe as unfair and unbusiness-like. Last year I spoke strongly against the City Surveyor undertaking architectural work, and gave certain reasons for doing so; now I am informed, on what I may consider very good authority, that the Corporation have decided that in future the City Surveyor will not be called upon to do architectural work, but that it shall be competed for by architects. I wish they would go a step further and appoint a City Architect, or, if that be not convenient, give the work out to responsible architects in the town. Personally I should be quite willing, indeed, I should prefer it to competing, to draw lots for the commissions as they arise. So much time and money are absolutely wasted in competing, however fair the competition may be.

Well, gentlemen, we have grown pretty well accustomed to the general appearance of this good old town, and although there is not very much that is beautiful, partly owing to the dreadful atmosphere and partly to the want of public spirit and good taste, I am sorry to say the effect of



the little that is beautiful in our streets is about to be obliterated by the erection of poles at very frequent intervals for the overhead electric power to drive the tramcars. These, of course, will do away with the hideous steam-engines at present in use; but even this will not compensate for the permanent disfigurement of overhead arrangement. I am not quite clear why our Corporation have decided to adopt it in preference to the underground system, whether on the score of cost or utility; but if only on the score of cost, it is a pity that our main thoroughfares should be so disfigured. I dare say we shall get accustomed to them, but it will take a long time, and in any case is certain to strike visitors as a dreadful eyesore. Well, the Corporation have in their wisdom decided to do these things. But they have also decided to do something else, which I believe every one of us will agree is excellent in every way. They are about to clear from the face of the earth a fearful disgrace to our town, viz. a great insanitary area (which I need not particularise, because we all know it), and to lay out broad streets, so that the fresh air of God can penetrate everywhere and be freely breathed by those whose fortune it is to live there. I hope they will arrange, further, to leave plenty of open spaces where the children of the poor can play, and where the older ones can sit and walk at leisure after their hard day's work. What the Corporation have decided upon is only a portion of the whole scheme; but I trust the day is not far distant when the whole will be dealt with. Great praise is due to the pioneers of this noble work. A year ago I forbore to criticise the works at Kirkstall Abbey for the reason that I thought it would be unfair to do so until the Corporation had completed their intentions.

Now these are, I believe, finished so far as the church is concerned, and we have Kirkstall Abbey preserved to us, and those who come after us, for many years, probably hundreds, but, alas! undoubtedly at the sacrifice of much that was beautiful. Perhaps time and the atmosphere will come to our aid; indeed they have already done so; for the pointing which a short time ago appeared very glaring has toned, so that in many places one would hardly know it had been done; but neither time nor the atmosphere can for ages alter much which, I think, should never have been done. I should like to hear a reasonable explanation for the destruction of the beautiful effect of the entrance to the Chapter House by putting octagonal pillars in some cases without bases, and in others without caps. If shafts were necessary for the support of the arches I do think they should have been as near like the originals as possible. There are other examples of a similar treatment everywhere, but it would take too much of your time to describe them in particular; but I must say when restoration and rebuilding have taken place they should have been exactly the same, as far as possible, as the originals. Who, for instance, can look at the central tower from the east, I was going to say, but from any point of view where it is visible—without feeling a pang of regret that its beauty has been utterly marred by the grill-like erection which, I presume, is intended to support a small portion of the wall above? These and many other details I regret. On the other hand, I have the greatest possible pleasure in saying that much most excellent and most necessary work has been accomplished at Kirkstall. I would like to take this opportunity of urging the Corporation, instead of building a new museum, which, I believe, is talked about, if not already decided upon, to act on the suggestion made by one who signs himself "Restoration," in a letter published in the *Yorkshire Post* on 11th April 1894, to restore the abbot's house and use it for a museum. In that letter there are four good reasons why this idea should be carried out; and, as I so entirely agree with them, I feel quite sure the writer, whom I happen to know, will not object to my repeating them here: 1st, The preservation of a rare twelfth-century domestic building; 2nd, its suitability for a museum

for the housing of deeds, charters, &c., which had perhaps at one time or other been read or prepared there by the reigning abbot; 3rd, the restoration of an interesting portion of the most ruinous part of the abbey; and 4th, the saving of the cost of a new building in the grounds, and I might add a building which it would be exceedingly difficult, if not altogether impossible, to design to harmonise with the abbey and its surroundings.

#### THE NORTHERN ASSOCIATION.

Extracts from the Opening Address of the Session.  
By Joseph Oswald *[F.]*, President.

Delivered 13th November 1895.

Our last Winter Session was exceedingly successful, and the out-door meetings held during the past summer have been numerous, well attended, and varied in character. We commenced by visiting the ancient churches of Billingham and Norton, near Stockton-on-Tees, and afterwards held an evening Conference in that town with several of the architects practising there, the object being to let them know, and enlist their sympathies in, the objects and work of this Association. Practitioners in the smaller towns are apt to feel cut off from their professional brethren in larger centres, and to minimise that unpleasant feeling anything that lies in the power of this Association should, within the province assigned to it, be willingly and promptly done. With the same object, on a more extended scale, I think it would be well if the Royal Institute of British Architects, with which we are allied, could see its way to hold an occasional meeting in one or other of the provincial centres; and I am glad to note that it is proposed to hold such a meeting in Manchester during the coming spring. I hope this may prove the forerunner of many similar provincial excursions of the Institute, and that in no far distant year this Association may be able to invite and welcome to this city a representative gathering of British architects. . . .

It must not be overlooked, however, that our Association has within the scope of its operations other affairs, which may be called "external," as they affect the relationships between our profession and the public in general, or sections of it, such as the various building trades in particular. As an instance of this may be noted an incident in the past year. An application was made to your Council for advice by the Master Builders' Association, in connection with a point of difficulty that had arisen in consequence of a feeling on the part of their joiners that work was occasionally done in buildings by cabinet-makers, which the former trade considered more properly within their own province. Definition being proverbially the grave of argument, it was suggested that an attempt should be made to define the line of demarcation between the work of the respective trades mentioned. Such a task is, however, difficult. Overlapping will, and must, take place occasionally, not only in these but in other branches of the crafts engaged in building operations, and the exercise of mutual forbearance, tact, and good feeling is the best policy in the interest of all workers and of the public, at whose will and for whose convenience and ultimate benefit all professions and crafts can only hope to exist.

It is a trite saying that history repeats itself. I was much interested lately to find, while glancing over some records of the ancient Incorporated Companies of Newcastle-on-Tyne, that as long ago as 1579 similar difficulties had existed. It was then made one of the rules of the House Carpenters' Company that there should be annually elected three wardens, two carpenters and one joiner; that "the joiners should work at the sealing of houses within, "the making 'dorments and windows,' 'drawn tables of " 'framework and tables with turnposts,' 'buffet-stools,' " 'forms,' 'cupboards,' 'almeries,' 'pressers,' 'chairs and " 'sconces of frame work,' 'easements,' 'trellising of

" 'windows,' 'buttries of framed-work,' 'framed chests,' and 'all others pinned with wood, as also every other kind of joiner's work. That the two trades should occupy, in common, the making of buttries, or any other kind of work with 'sealing linck,' i.e. one board grown in another and nailed with iron nails; 'chists for corpses, and all other 'chists not pinned with wood'; 'removing of beds, cup-boards and draw-tables, together with making of doors 'and windows mulder work.' " And I also find that ten years later, in 1589, the joiners separated themselves from the house carpenters and constituted a fellowship, or Company, of themselves; and that much later, in 1737, the two Companies "agreed upon a schedule of the sorts of work peculiarly belonging to each, and also of the several sorts of work, in common, which both might execute "without distinction." In searching these records of the old freemen of our town, I find that, in addition to the Companies I have mentioned, there were also the following connected with buildings, viz.—bricklayers and plasterers; masons; slaters; smiths; plumbers; pewterers, and glaziers; and upholsterers, tinplate workers, and stationers; the last a curious combination, having amongst its rules one that they should not interfere with each other's callings. One thing most noteworthy is, that in each and every Company stringent regulations were in force as to the taking and training of apprentices, the tendency in those days being apparently to excess in the number of them, calling for restrictive measures. In concluding my Address to you last year I ventured to call urgent attention to the tendency in our own times towards the opposite extreme. I feel sure that from no other cause have the building trades in this country suffered so much in quality during the last quarter of a century as from this. It is, for obvious reasons, difficult for a private individual to obtain trustworthy statistics within any particular district upon this subject; but it must be within the experience of us all that the general standard of work has been, and is being, lowered in consequence of the decay of the old system of apprenticeship, and the absence as yet of any efficient substitute for it.

It is within your recollection that, only a month ago, the newly formed National Association of Master House Painters of England and Wales held its annual meeting in our city; and it was refreshing to notice, in perusing accounts of its proceedings, that one of the objects most prominently set before its members was the revival of the apprenticeship system in that particular handicraft. May their efforts in this direction be rewarded with success! Though I have not attempted to furnish you with authentic particulars relative to this subject, gleaned from our own district, I wish to bring under your notice an elaborate report upon it, prepared under the auspices of the Technical Education Board of the London County Council, and published in the October number of their *Gazette*. From it we learn the appalling fact that, taking the building trades in London as a whole, estimated to employ 12,000 men in all, including labourers, there are only about eighty apprentices! Four firms with a total staff of 1,000 had not one apprentice among them. It would occupy too much time to quote at length from this Report, but in detail it purports to be the result of information derived from forty-one out of ninety firms applied to. Twenty-two of these firms were general builders, and the remainder were firms following in each case one only of the separate trades connected with building. Five firms of bricklayers had only twelve apprentices among them; five firms of masons had fourteen apprentices; while nine firms of joiners had thirty-four apprentices, being a far larger proportion than in any other trade. Whence then, we naturally ask, does London draw its supply of artisans? The Report supplies the answer. First of all, there is a class which may be called "learners"—143 were employed among the forty-one firms referred to. These learners are not legally bound; and can,

therefore, be instantly dismissed for misconduct, or if their services are not for the time being necessary to the employer. It may be surmised, also, that as soon as the learner imagines he has "picked up" sufficient of his trade to enable him to pass muster as a qualified journeyman elsewhere, he will not be slow to avail himself of his liberty. Such a one is hardly likely ultimately to attain a high standard of excellence. Secondly, the London building trades are being continually reinforced by the influx of journeymen from the country. The provinces, in fact, have to train men for the London market. This being so, it is evident that to cope with such a demand the provinces ought to train a number of men greatly in excess of their own requirements. But this, I take it, is not the case, the result being that the provinces are liable to become depleted of the best class of workmen. The same causes that lead to the dearth of apprentices in London apply in a modified degree to the provinces, and especially to the more populous provincial centres, like our own Tyneside. These causes, as suggested by the Report under consideration, are (1) the engrossing nature of the commercial side of modern business; (2) the extensive use of machinery; (3) the necessity of utilising all available space for securing the maximum productive power; (4) the reluctance of employers to undertake moral responsibilities which cannot properly be discharged without personal supervision of the individual; and the difficulty of enforcing discipline without an appeal to the law, which, in the present state of public opinion upon the so-called liberty of the subject, is practically futile.

Under these circumstances, the working of the various schemes for technical education promoted by county councils and other bodies throughout the country deserves to be watched with the closest interest. Everything possible should be done to promote the success of such endeavours. But, says the Report, "there exists a deep-rooted belief in apprenticeship as being the best means by which a boy can learn his trade and eventually secure good wages, for it was often acknowledged that only those men who have served as apprentices are able to practise the trade in its higher branches." One firm criticises technical classes, as at present carried on, thus: "The instruction does not form a satisfactory substitute for apprenticeship. It is too flimsy and too much in the nature of an exercise or recreation. There is not the reality about it such as is obtained in the shop or on the job. Moreover, there are not the facilities for thorough practical teaching. The instructors are rarely good, sound practical men, such as are secured as builders' foremen"; but such classes "can supplement the apprenticeship, and greatly assist by giving instruction in subjects which cannot be imparted in the shops." The Report concludes by suggesting (1) that the Royal Institute of British Architects should take the question up, and use its influence with builders to consider the matter seriously; (2) that the trade unions should issue certificates to their members who have served proper apprenticeships and passed some sort of qualifying examination (somewhat on the lines of the certificates of registration issued by the Plumbers' Company); (3) the dissemination of good technical literature among young men in the building trades. To my mind, the solution of the difficulty lies largely in the hands of the trade unions. These powerful organisations have hitherto dealt chiefly with the financial relationships between employers and employed; but I trust, in this so-called enlightened age, the equally important relationship between the workman and the general public will be recognised by these unions. The safety and requirements of the public call for the maintenance of a high standard of efficiency in the work done for it; and it is the duty, and ought to be the pride, of the artisan so to do his work in the world that the labourer shall be verily and indeed worthy of his hire. In the long run, other theories not-



withstanding, the best article must command the highest price, and, therefore, it is the true interest and policy of the producer to supply it. . . .

It is surprising to note how, during the present century, the number of professional architects has multiplied, and that they all can find employment. They exist in accordance with a public demand, and what the public requires nowadays in the architect is, not an artist only or chiefly, but a man of business. As practising architects, we are expected to know much about and be re-ponsible for many things which as youthful students we should have regarded with repugnance. Most of us looked forward, no doubt, to spend our future in the delightful task of giving reins to fancy in the design of monumental edifices destined to hand down our names with honour to posterity. Alas! we have, by the inexorable laws of exchange, been forced to clip our wings and descend to lesser ambitions. But, as George Herbert sings—

Who sweeps a room as for Thy laws  
Makes that and the action fine ;

and there is a satisfaction in bringing mental abilities to bear upon whatever Fate has placed in our way. We cannot all be artists; we cannot all be specialists; we cannot all select the work we should like to do best; but we can all, even as men of business, infuse into our work some of that spirit which inspired our youthful dreams, besides taking care that matters which the public deem much more important do not suffer at our hands. As designers, we may, I think, take a lesson from the way in which Mr. Phil May, the leading black-and-white humorist of the day, is said to work. It is reported that he first makes a very elaborate drawing of his subject, and afterwards eliminates every line that does not tell, every line that is not requisite for the story he has to convey. To apply this to ourselves, it appears to me that many of our designs would not suffer by a similar process. We are apt to sit at our boards and work up our elevations, so as to make the drawing itself effective, forgetting possibly that the drawing is only a means to an end, and that the building itself is the object where effectiveness is needed. Elaborate detail in the drawing may be lost in the building itself; whereas, if we use our indiarubber and obliterate the unnecessary, we shall probably insure the proportion of the various parts of our buildings being good, and in just relation to one another. Without these attributes no building, even if covered with ornament, can be satisfactory. Carved ornament is frequently placed where it cannot be seen to advantage. It was put on the drawing, no doubt, to make this "look pretty," but in execution it is far from the eye, and in such positions as to invite a speedy veil of soot and dirt. In my Address last year I ventured just to touch upon this topic, under the head of "Restraint in Design." Under the title of "The Value of Simplicity in Architecture" it was admirably dealt with at a meeting of the Royal Institute in February last, when excellent Papers were read by the President and others.

The exigencies of modern commerce tend to give our street fronts the appearance of glass tanks in an unsuccessful aquarium gone into liquidation of another sort, the water being run off and the space inside devoted to the display of other than marine curiosities. Only a few years ago one of our members remarked to me that, in street buildings where there are shops, architecture began at the first floor; but were he now to be reminded of that criticism he would be inclined to say that architecture had gone up another storey. I actually saw not long ago, in a North of England town, a place of business three storeys, I think, in height, where the entire frontage, from pavement to eaves, consisted wholly of sheets of plate-glass in wooden frames. And so in towns whose bye-laws require even the out-offices in the back yards of houses to be constructed with walls of brick "not less than

"nine inches thick" we may find buildings in the principal streets whose front "walls" are simply of glass  $\frac{1}{4}$  inch thick for ninety-nine per cent. of their superficies. Let but one of these catch fire, and woe betide the inmates, the passers-by, or the firemen!

Much of the work of the general practitioner of architecture, as now developed, is technically that of a surveyor: an honourable title, although somewhat out of fashion, except in legal phraseology. The learned President of the Royal Institute is surveyor to the fabric of St. Paul's Cathedral, and proud of his office. Such work may comprise valuations; negotiations as to ancient lights, party-walls, and easements generally; arbitration upon all questions connected with land or buildings; the investigation of failures in construction; settlements from subsidence of the strata beneath or other causes; the laying out of building estates; sanitary science; and other matters too numerous to mention. On all of them it behoves us, as nineteenth-century architects and men of business, to keep ourselves up to date; to be masters of the jurisprudence of building; and to be well versed in the latest productions of the human mind and hand applicable to buildings. The introduction of electricity, for instance, in so many forms in modern structures calls for careful study. I could wish that the Papers from time to time read before this Association were sometimes of a more practical nature than they usually are. Some years ago our then Secretary compiled a list of suggestive titles for such Papers, but, so far as I recollect, only one member has as yet responded. The Institution of Civil Engineers annually publishes a list of subjects of professional interest, and invites original communications thereon, awarding from the funds at its disposal premiums or prizes in acknowledgment of such as are deemed of superior merit. I think the Royal Institute of British Architects and the Allied Societies might follow this example with advantage. At present the Institute prescribes annually the subject of an Essay, and awards substantial recognition to the best received; but I think a greater range of subjects and less abstract ones would lead to more interesting results. . . .

I have mentioned incidentally that competitions were in vogue a hundred years ago, and that All Saints' Church in this town was the outcome of one at that time; and I could adduce several other instances almost as early. The competition system has undoubtedly "come to stay" in our midst. Like the poor, it is always with us. "There is nothing," said the President of the Institute a fortnight ago, "in other liberal professions at all analogous to our architectural competitions, and they certainly do not raise architects in public estimation." I suppose that everything that may, can, should, or could be said or written upon the subject has been listened to and read over and over again, and I would have refrained from mentioning it to-night, save that no Presidential Address to an Architectural Association appears complete without some reference to it. The evils of the system exist, but can be ameliorated. Much has been done by the Institute and the Allied Societies in that direction already, but more remains behind. One condition continually met with in the terms of competitions is that the promoters shall be at liberty to discard the successful architect either without remuneration altogether, or in some cases with remuneration totally inadequate, unless he finds a third party able and willing to carry out his design for a certain sum stipulated by the promoters. This sum is generally absurdly small when measured by their requirements of space accommodation and materials. One would suppose that such promoters (shrewd commercial men generally, too) believed that the architect was in possession of the powers of a despot or magician who could control the markets, and who could dictate to labour and capital his own terms, or rather the terms of the promoters. The same men,

assembled together as a municipal or county corporation, would probably vote unhesitatingly for the payment of a certain minimum standard of wages upon their works. Now, it stands to reason that, in a building of given area and height, of certain materials and contents, the power of the architect over its cost on the side of economy is limited in the extreme. And to ask him to stake his commission against the chance of a reliable tender being at a certain moment obtainable at a certain low price is simply to ask him to become a party to a betting transaction, which his employers, often leading lights in religious and charitable schemes, would recoil from in horror if called by that name. As all respectable competitions are now conducted under the advice of professional assessors, who are competent to advise the promoters upon the question of probable cost, I think competing architects should make a firm and united stand against a condition so manifestly unfair as that to which I am now referring by absolutely refusing to be bound by it from the very outset. No doubt promoters insert such a clause to protect themselves against certain responsibilities, not necessarily referable to the architects, and that their moral sense generally steps in, even at the eleventh hour, to guard architects against grossly unfair treatment. But the fact should not be overlooked that promoters are generally collective bodies, and it is a well-known fact, albeit a deplorable one, that a number of men gathered together round a table will collectively suffer things to be done in their name which each of them, as an individual, would be ashamed of doing himself.

An instance of this kind has occurred recently in connection with the competition for new County Buildings at Durham. This Association and the Royal Institute have both respectfully protested against the course pursued in that case. It appears, however, from a perusal of the conditions, that the County Council are legally "within their rights." Legal rights, however, are often moral wrongs. When the Durham County Council agreed to appoint, and did appoint, a competent architect as assessor to assist them in selecting the best design, it seemed to go without saying that, except under very extraordinary circumstances indeed, they would be guided by the advice they themselves sought, and expended the ratepayers' money upon obtaining. . . . A nobleman, deservedly respected by us all, stigmatised the agitation against the Durham scandal as "a mere professional squabble," clearly showing that for once he failed to grasp the principle at stake. I have never known an agitation so free from the suspicion of personal taint. So far as I can learn, very few local architects competed; and, so far as I have heard, no blame is attributed to the victors by the vanquished. The different architects selected by the Assessor and the Council respectively are all alike Associates of the Institute, and the latter are members of our own Association. As such, we should be naturally proud to congratulate them on well-earned success. Such cases will continue to occur so long as competing architects are innocent enough to assume absolute good faith on the part of the promoters of competitions. The only remedy, to my mind, is for every architect proposing to enter a competition to satisfy himself, from a careful perusal of the conditions, reading critically between the lines, that the suggestions of the Institute for the Conduct of Competitions are fully and literally complied with; otherwise, should he compete, he may, when too late, appeal in vain to a conscience non-existent in a body without material substance to suffer pain, or immortal soul to need salvation. Such competitors must lay their account to bear "The insolence of office, and the spurns, That 'patient merit of the unworthy takes.'" It is childish to complain that the Institute or the local Society "never does anything," when the competitors themselves have, by the implied acceptance of improper conditions, tied their own hands, and also those of the representative

bodies who might otherwise fight their case with some chance of success.

Let us dismiss an unpleasant topic and turn to a more congenial one. Our alliance with the Institute and our representation on its Council keep us ever more and more in touch with our metropolitan brethren, and through them with those constituting the 15 Allied Societies covering the United Kingdom. For several years past selections from the drawings submitted for the Studentships and Prizes in the gift of the Institute have been regularly sent down for exhibition to our members and the public. Yesterday and to-day we have held in this city one of the Preliminary Examinations established by the Institute. In 1893 we conducted here a Qualifying Examination for the Associateship of the Institute, and we hope that, in June next, other Examinations (Intermediate or Final) may be held in this city. The convenience to provincial candidates of examinations held in local centres is very great. The fatigue of a long journey at a critical time is saved; the outlay and possible discomfort inseparable from several days' sojourn in London is rendered unnecessary; and, perhaps more important than these, the dislocation of habit attending an absence from home is avoided, and the excitement, so apt to accompany an examination, to the prejudice of a candidate's success, is reduced to a minimum, when it is held amid familiar scenes and faces.

In conclusion, I thank you for the kind attention accorded to my too lengthy and withal fragmentary remarks, and trust, while not hesitating to criticise them, you will at the same time regard what I have said in the light of a friendly monologue, rather than a studied dissertation in which every word and phrase has been pondered over ere set down. My aim has been, not to dogmatise, but to arouse discussion and the free interchange of thought and opinion upon matters affecting the Service of the Community and the Adornment of its Surroundings. "*Usui Civium, Decor Urbium.*"

## LEGAL.

### The London Building Act, section 212.

TANNER v. OLDHAM.\*

This was an appeal by special case from the refusal of a police magistrate to convict under the London Building Act 1894. The appeal was heard on the 26th October by Mr. Justice Cave and Mr. Justice Wright. The question of law was whether upon the true construction of section 212 of the Act of 1894 certain proposed buildings must, as regarded thickness of walls and otherwise, conform to the requirements of the Act. By an agreement in writing, dated 3rd January 1894, between the Haberdashers' Company and the respondent (a builder), the latter agreed to erect upon four several pieces of ground not fewer than forty-three dwelling-houses, of which six were to be completed before 25th March 1895, ten more in 1896, 1897, and 1898, and the remainder in 1899. The respondent in March 1895 served on the appellant, Mr. A. W. Tanner, district surveyor under the Act of 1894 for the district of Hatcham, a notice stating that he would build five houses, each consisting of two storeys with a cellar underneath, and furnished plans of the house he proposed to erect first. The appellant decided that the house so proposed to be erected would be in contravention of the Act of 1894 as to the thickness of the walls, and served the respondent with a notice of objection. The respondent appealed to the magistrate against this notice, and, relying on section 212 of the Act of 1894, contended that the buildings were to be carried out under a contract entered into before the passing of the Act. The proposed

\* This and the following cases are compiled from the *Law Journal* and *The Times* reports.



buildings would have satisfied the requirements of the Metropolitan Building Acts in force prior to the Act of 1891. The appellant contended that section 212 applied only to a contract for the erection of specific buildings at a fixed price; that the proposed buildings could not be said to be "carried out" under the building agreement or to be completed within the meaning of the section, and that they did not comply with the Act. The learned magistrate was of opinion that the building agreement was a contract within the meaning of section 212, and disallowed the objection. Section 212 provides:

Notwithstanding anything contained in this Act, a building, structure, or work which has been commenced before and is in progress at the commencement of this Act, or which is to be carried out under any contract entered into before the passing of this Act, may be completed subject to and in accordance with the provisions of the Acts relating thereto as in force immediately previous to the passing of this Act.

Mr. C. A. Cripps, Q.C., and Mr. F. F. Daldy, for the appellant, argued that the word "building," "structure, or work," pointed to a contract for carrying out a particular building. The section did not apply to a contract of such a general character as the present, which was to be in force for four years.

Mr. A. R. Jelf, Q.C., and Mr. J. P. Grain were for the respondent.

The Court held that the learned magistrate was right. Section 212 was purposely wide in its terms, and related to a "building, structure, or work" to be carried out under a contract. The word "contract" could not be narrowed down to "specification," though a specification might be part of a contract.

#### "Sewer" or "Drain."

RICHARDSON v. THE VESTRY OF ST. MARY, NEWINGTON.

At the Lambeth Police Court on 4th November, before Mr. Hopkins, the Vestry of St. Mary, Newington, were summoned by Mr. Harry Richardson, of Finsbury Square, for neglecting to repair and amend a certain sewer draining several houses in Gurney Street, Newington. The proceedings were taken under section 12 of the Public Health (London) Act 1891.

Mr. Blanckensee appeared in support of the summons, and Mr. Morton Smith represented the Vestry.

The complainant is the leaseholder of the houses in question, which are drained by a combined operation, several houses being served by the same pipe connection with the sewer in the roadway. It was contended on behalf of the complainant that this being a combined drain—to the construction of which the consent of the local authority had never been given—the Vestry were liable for its repair.

On behalf of the Vestry, Mr. Morton Smith contended that the onus of showing that the drain was constructed illegally—that is to say, without the consent of the local authority—was upon the complainant. He also submitted that the Vestry could not be proceeded against under this section of the Act, and remarked that since the case of *Kershaw v. Taylor* [Vol. II. pp. 574, 643] owners of this class of property had been trying to take advantage of the decision by throwing the onus of putting their property into a proper state upon the Vestry.

Mr. Hopkins, in his judgment, stated that the first question which arose in the case was whether or not this was a sewer, or whether it was only a drain. Looking at the pipe itself, quite apart from any question arising under the statutes, he came to the conclusion that this was a sewer common to all the houses. It might be shown, if certain things could be proved, that this pipe, instead of being a sewer, was a drain, in consequence of the arrangements made with the owner of the property at the time the pipe was laid. None of these things had been proved, and the question was, Whose business was it to prove it? He

thought the onus was upon the Vestry, who had all the papers relating to the matter under their control, and who ought to be able to show whether certain consents were given. There was another point in the case that had given him a great deal of trouble—the point that the Public Health (London) Act 1891 provides no machinery by which the sanitary authority can be compelled to keep their sewers in order. He had searched the Act through without being able to discover any sort of machinery which compelled the Vestry to keep their sewers in order. The whole of the statute, from beginning to end, looked upon the Vestry as the complainants. There was no process short of indictment by which the Vestry, upon whom, so far as he understood the statute, the burden of keeping this pipe in repair fell, could be compelled to repair their sewers. He did not think he could make any order under this statute to compel the Vestry to repair this pipe, and the summons would therefore be dismissed.

#### FLORENCE v. THE PADDINGTON VESTRY.

There was an action in the Chancery Division, heard before Mr. Justice Chitty on the 9th November. The plaintiff, in 1894, had purchased the fee simple of Nos. 149 and 151, Church Street, Paddington. Shortly afterward, he received from the defendants, the Paddington Vestry, a notice to repair a defective drain. The plaintiff accordingly opened up the drain, and then for the first time discovered that premises at the rear belonging to another owner were drained into the drain. The plaintiff claimed repayment by the defendants of some £17 expended by him in repairing the drain, on the ground that it was a sewer within section 250 of the Metropolitan Management Act 1855, and therefore repairable by the local authority, in accordance with *Kershaw v. Taylor* [Vol. II. pp. 574, 643]. It appeared that the connection with the drain was made some thirty years ago, without the authority of the Vestry, and merely by the permission of the then occupant of the Church Street houses, no other permission being asked. The plaintiff when he purchased made no special inquiry as to the drainage. By section 250 "the word 'drain' shall mean and include any 'drain of and used for the drainage of one building only,' and shall also include any drain for draining any group 'or block of houses by a combined operation under the 'order of any vestry or district board; and the word 'sewer' shall mean and include sewers and drains of 'every description, except drains to which the word 'drain' interpreted as aforesaid applies.'" In *Kershaw v. Taylor* a builder had authority to make drains by which the sewage of each pair of four houses he was building was to be carried in a single drain to the sewer, and this was to be done to the satisfaction of the surveyor. The builder made a single drain for the four houses. As the drain did not merely drain one building, and was not created under the order of a vestry or district board, it was held to be a sewer within section 250, and to be repairable, not by the subsequent owners of the houses, who had no notice, but by the local authority.

Mr. Byrne, Q.C., and Mr. R. F. MacSwiney appeared for the plaintiff; and Mr. Farwell, Q.C., and Mr. T. A. Nash for the defendants.

Mr. Justice Chitty said that *Kershaw v. Taylor* governed the present case. The connection here was made without the consent of the local board or the owner of the house. In *Kershaw v. Taylor* a scheme of drainage had been approved by the local authority, but the drains constructed were not in accordance with the scheme. Consequently in both cases the drain was unlawfully made, but the plaintiff did not claim under the person making the unlawful connection. The plaintiff had no notice that anything unlawful had been done. He was not bound to inquire as to another's acts. The plaintiff was entitled to a declaration that the drain was a sewer, and to be repaid the money he had expended in repairing it.



## SOME RECENT DISCOVERIES AT NEMI, IN THE ROMAN CAMPAGNA.\*

By J. TAVENOR PERRY [A.].

NOTICES which have lately appeared in the public journals have drawn attention to the exploration, once more being attempted, of the bed of the Lake of Nemi; and as the discoveries which have been made, both in the lake and on its shores, are already of considerable importance, and are likely to lead to further efforts, some account of what has been accomplished may be of interest to the members of the Institute.

No visitors to Rome neglect to spare at least a day to feast their eyes on the wonderful beauty of the Lake of Nemi; and to architects and engineers there is the further interest that through all its known history it has been the scene of great and important works, remarkable even among Roman constructions. The earliest of these is the great tunnel, or emissarium, nearly a mile in length, which is cut through the solid peperino, or occasional masses of basaltic lava, by which the waters of the lake were reduced to their present level, and which still carries off the surplus water. From its surface the great Temple of Jupiter on Monte Cavo can be seen, and on its shores the beautiful Artemisium, or Temple of Diana, was built. The last of these works, the main road from Albano to Genzano, built for Pius IX., is modern. It is carried across the valleys around Ariccia by viaducts, one of which consists of three tiers of arches rising to a height of 196 feet above the valley. Nibby, quoted by Burn in his *Rome and the Campagna* (p. 354), thus describes the lake:—"The situation of Nemi is picturesque, and the view from it of the crater and of the lake, which resembles an enormous mirror spread below, is magnificent. But, beyond the historical reminiscences of the Temple of Diana, it presents nothing worth particular mention. The baronial castle near it has all the appearance of a feudal fortress. It was built by the famous Colonna family, once the lords of the estate, who also built the round tower or keep which surmounts it. By ascending the side of the mountain which rises above it a splendid panoramic view of the coast of Latium, and of the adjacent Rutulian and Volscian territory,

\* The illustration at the head of this page is the reproduction of a photograph of a bronze ring and pile head from the Lake of Nemi, the name of which, and of the village on its margin, is derived from the great grove of Diana, whose Temple (wrote Burn in 1870) probably

stood on the site of the present village—the doubt having been removed by the excavations of 1885, when the walls of the temple were found, according to Murray's *Handbook of Rome and its Environs* (p. 420), at the Giardino del Lago, one mile below Nemi to the north-west.



"may be enjoyed. The eye ranges along the whole coast-line of the Tyrrhenian Sea, from the "Circæan promontory to the mouths of the Tiber, and the situations of Antium, Ardea, "Lavinium, Laurentum, Ostia, and Porto "are clearly distinguishable, together with "many other points."



FIG. 1.—FRAGMENTS FROM THE A RECOVERED FROM THE LAKE OF NEMI.  
made by Professor T. Hayter Lewis, 1885.  
A moulding of the Doric capital, recovered.

bronze statuettes of Diana and the many other valuable articles discovered on the site have been deposited in the Nottingham Castle Museum. Through some difficulty or dispute which arose relative to the ownership of the articles found, the excavations were discontinued

The position of the Temple of Diana Nemorensis, to which Nibby here refers, was for long unknown; but the excavations below Nemi, made by Lord Savile ten years ago, have settled this point, and disclosed very considerable remains of ancient buildings. In the last (1894) edition of Murray's *Hand-book of Rome and its Environs* (p. 420), a plan is given of the Temple and its surrounding walls, with particulars of the various remains laid bare by the excavations. The

and the earth filled in again, but fortunately not before they had been examined by Professor T. Hayter Lewis, who in 1885 made a plan of the buildings, with sections of some of the mouldings discovered, which, by his kindness, I am permitted to publish [fig. 1]. From these it will be seen that the building was of the Doric Order, and more Greek in its character than any other building so near to Rome. The buildings were erected on an artificial terrace of about 10 acres in extent, the Temple itself being about 80 feet by 50, raised on a base marked with the moulding B, which has a projection of  $14\frac{1}{2}$  inches. The moulding A, which is 14 inches deep, is assumed to be part of the cornice; and the moulding C is part of a capital. In the retaining walls, which surrounded three sides of the terrace, were great niches 30 feet high and 15 feet wide built of opus incertum.



FIG. 2.—BRONZE MOORING RING, RECOVERED FROM THE LAKE OF NEMI.

It was long believed that one of the early Casars had erected a floating palace on the surface of the lake, and many attempts have been made to recover it; but the conclusion at last arrived at is that the tradition was wrong, and that the palace, or whatever it was, was



FIG. 3.—MOORING RING.



FIG. 4.—MEDUSA HEAD.

ANCIENT BRONZES RECOVERED FROM THE LAKE OF NEMI IN THE ROMAN CAMPAGNA.

REPRODUCED FROM PHOTOGRAPHS PRESENTED BY THE AUTHOR OF THE PAPER.



of the nature of a permanent structure raised upon piles. Nibby's account, as given by Burn in the latter's *Rome and the Campagna* (p. 354), will show how the case stood before the discoveries of the last few months were made. He says :—

The story of the ship discovered at the bottom of this lake, and said by some authors to have belonged to the time of Tiberius, by others to that of Trajan, is well known. Biondo, Leon Battista Alberti, and particularly Francesco Marchi, a celebrated architect and military engineer of the sixteenth century, who went down into the lake himself, have spoken of it. Fresh investigations have been carried on of late, at which I was present, and saw and examined everything which was brought to the surface, and inquired of those who went down what they saw there. I consider myself in a position to assert that the pretended ship was nothing more than the wooden piles and timbers used in the foundations of a building. The beams are of fir and larch, and are joined by metal nails of various sizes. The pavement, or at least the lowest stratum of the remains, is formed of large tiles placed upon a kind of grating of iron, on which the name **CAISAR** in ancient letters is marked. Some of these tiles and nails and gratings are now kept in the Vatican Library.

The name CAISAR seems to explain the history of the building. For Suetonius, in his life of Julius Caesar, as an illustration of the Dictator's extravagance, asserts that, after having built a villa on the Lake of Nemi at an enormous expense, he had the whole destroyed because it did not quite suit his taste. It is my belief that the pretended ship was nothing else than the piles and wooden framework upon which this villa was supported, and that after the upper part was destroyed the foundations under the water still remained, partly covered by the fragments of the demolished building above.

In Nibby's conclusion, that it was a permanent building, Burn concurs; and he advances, as an additional argument, the fact that the leaden pipes now preserved in the Kircherian Museum of the Collegio Romano were more likely to belong to a villa than to a ship. Such was the state of our knowledge of the lake buildings until a short time since, when diving operations were resumed, with a result which clearly shows that previous examinations had been very hurriedly or carelessly made; and that Nibby had but very imperfect data from which to draw his conclusions—that after all the ancient tradition was correct.

Being in the Cesarini Gardens at Genzano a short time since, I saw a small raft, moored out on the Nemi side, disturbing the placid surface of the lake; but I was then unable to ascertain why it was there. Returning to Rome I made some inquiries, which not only enabled me to get what I believe to be authentic information as to what has been done, and what it is further proposed to do, but to obtain the beautiful photographs printed with this communication [see figs. 2, 3, 4, and the headpiece].

The recent diving operations, which have so far been carried out by private enterprise, have resulted in proving the supposed villa to have been neither more nor less than the landing stage of the traditional galley, which had gradually subsided by decay beneath the water of the lake, and which has thus been preserved until now in a fairly perfect condition. It is of considerable extent, and lies about 60 feet below the surface, and can only be brought up to the land, piecemeal, after considerable damage. The matter is, I believe, under the consideration of the Italian Government. They have before them a proposal to employ some skilled engineers from Spezzia, who, by forming a coffer-dam around the stage, the extent and position of which have now been accurately determined, and by pumping out the water, will either raise it to the surface, or expose it so that it may be carefully examined and delineated by experts. The piles which support the stage are sheathed in copper and they were capped with bronze, having on the one face heads holding the rings in their mouths for the mooring ropes. These heads, of most beautiful workmanship, are perfectly preserved. Being easily moved, the heads have been brought to the surface, and prove clearly that they were provided for mooring ships or galleys to the stage: and that the tradition of the galley

is reasonable. The Medusa Head, of still more exquisite workmanship, may have been affixed to a prow, but I was unable to ascertain exactly the position in which it was found. The stage was laid with a marble pavement, consisting of large plaques of porphyry, with encircling pieces of white and green marbles and a quantity of glass mosaic. From the descriptions it would seem that the character of the pavement was that of opus alexandrinum.

It is also stated that the galley has been seen afresh, and the discovery of the use to which the permanent structure was devoted has clearly demonstrated that a movable palace or ship of some sort was intended to be placed on the lake. It is to be hoped that when the stage has been recovered, the galley may be at least looked for; but, even if found, the enormous depth of the lake in its centre may preclude any attempt to raise it.

## THE BROTHERHOOD OF ARCHITECTS: AN ESSAY.\*

By PAUL WATERHOUSE [F.], M.A.Oxon.

*Too many practising architects of repute, and even a few of well-earned distinction, form no part of the Institute, forgetful, as too many of them are, that their influence and usefulness would be infinitely greater were they members of the corporate body, prepared to discuss important matters without bias, and to sink details of difference in a spirit of compromise, without which no Corporation, Community, State, nor Government of any description has ever been successfully carried on. . . . On the strength of long acquaintance with those present here to-night, and with many others who, alas! are lost to us, I venture to make an appeal to the good feeling, the good sense of British architects everywhere, . . . to join hands and show a united front to all and any who would do them wrong, either from an artistic or a business point of view.—THE PRESIDENTIAL ADDRESS [p. 13].*

**A**RISTOTLE observed that "man is a social animal," whereby he implied that isolation is nothing less than an infringement of manhood. It is not by mere accident that human beings are multitudinous; it is an integral part of their essence to be socially and politically bound one to another. Now this fact in relation to mankind has a counterpart in the smaller world of architects. The isolated architect is an impossibility—a logical nonentity, incapable of existence. Think of it for a moment; let us imagine, if it be possible, an only architect—a man with no past tradition to guide him, no present environment of contemporary taste, and with no critics to fear in the future. Even fancy cannot call up such a being.

Now I desire to draw attention to the fact that, by merely being an architect, a man becomes indissolubly part of a homogeneous corporation which in extent covers the greater part of both hemispheres; and in the matter of age is only a little younger than the human race. Of course I know that this consideration applies in a degree, not to our profession alone, but to lawyers, doctors, musicians, painters, and to a host of other bodies of artists and learned men, who can point with pride, not merely to a far-reaching sphere of activity in the present, but to a remote continuity in the past. For all this, I am ready to claim for our art that the conditions of which I am speaking apply to it in a quite peculiar manner, and to an unusual, a unique extent. It sometimes seems to me that the sculptor, the moral philosopher, and perhaps the ploughman are the only persons who can claim to share with the architect the common ground on which he meets the ancients. The lawyer, truly, studies ancient codes; and the basis of Roman law in our British statute-books rivals the architect's reliance on classical or mediæval tradition. But, for all that, our ancient heritage is far less modified in the process of handing down than is that of the lawyer. In other fields of learning and art

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which are nominally continuous from the earliest ages, how vastly have the very first principles altered! So greatly, that though the painter may look back to Apelles as his prototype, and though the men of music and medicine may claim descent even from Orpheus and Æsculapius, there is with them no such identity of the ancient with the modern as can in any sense compete with ours.

Does it ever occur to us to think, as our hand upon the drawing-board travels round the curves of an Ionic volute, that the very lines we are tracing have been followed by the men of the age of Pericles? Do we reflect that the problems of adapting traditional form to particular requirements, which occur in the use of the classical members, have all been studied stage by stage, probably on the same line of thought, by ancient Romans? Why, so close is the community of thought that, if Letinus came among us some evening, nothing but the barrier of our limping Greek would prevent our talking the most engrossing "shop" with him till dawn. The thought is not merely a pretty fancy. Once dwell upon it, and it will often come back to the thinker as a cause of pride and of pleasure. But it is more than that. It is, and we ought to feel it to be, the sign of an immense responsibility. And the moral of it all is the urgent necessity for two things, *Study* and *Dignity*. No architect, I feel sure, can reflect upon the marvellous way in which he is involved as an architect in the great continuous past without feeling a sense of the responsibility which such a continuity brings with it. Isolation in an architect, complete isolation, is, as I have pointed out, an impossibility: but that tendency towards isolation which is a result either of idleness and ignorance, or of a mistaken idea as to the functions of inventive genius, is, alas! not an impossibility but a gruesome reality—it is an artistic crime.

I have said that *Study* and *Dignity* are the two attitudes of mind which should be encouraged by the thought of our noble and ancient lineage. Let me explain more fully what I mean. If a man is the inheritor of an ancient title, or the holder of an office of great worth and honour, there is attached to the decency of his actions a greater importance than in the case of irresponsible and unofficial persons. And I feel sure that in our own case the mere realisation of the fact of our identity with the great series of men who have borne the name of architect ever since history has been written enforces the necessity for a consistent decorum and for a conscientious study of those traditions which are nothing less than the insignia of our honourable post. The briefest glance at the elements of architectural propriety will show that what I am urging is no fancy but a first principle. It is no slight upon the genius of inventive design to say (and one must repeat the saying at the risk of seeming tedious) that to be a great architect a man must know, and know thoroughly, the methods of architecture in the past. It is often maintained that a great archæologist can never be a great architect, and that the merely accurate copying of ancient detail, whether Gothic or Classic, will never produce living, real, and spontaneous architecture. This is a most true, but most dangerous, doctrine. A copyist is not an artist, but I am prepared to hold that the architect whose works show a marked variation from traditional methods of detail and composition because he does not know what these methods are, or because he believes it to be an insult to his own originality to do what has been done before, will not produce buildings of any permanent or real artistic value. Here is an experiment to prove the truth of the paradox. Most of us have our heroes: most of us could single out a little group of three or four men, either living or in the modern past, whom we regard as the best architects of recent years. Examine the works of these men, and what do you find? Study and dignity—that is, knowledge of the past and a sense of decorum which positively precludes the introduction into their works of merely idle novelties.

There are people who, in despair of seeing the development of what they can recognise as

a new style, fall back upon a theory that our present epoch is so situated architecturally as to be only capable of borrowing bygone methods. Invention, they say, is played out; there have been so many styles in the past, and our present knowledge of these styles is so complete, that our age alone of all the ages is compelled to be eclectic rather than original. My remarks are in no way a concession to this theory, which I regard as false and inconsistent. Search where you will in the architectural history of mankind, and you will nowhere find a period of architects inventing a new style in the sense in which the ordinary outsider uses the term. Styles, to be sure, have been more than once imported from one country to another, and I think it must be acknowledged that wherever in any country you find a really noticeable change of style abruptly introduced, the change is due either to a conscious recurrence to some ancient manner, or to the equally conscious introduction of foreign methods or even foreign workmen. The nomenclature applied to the various periods of English and Continental Gothic architecture is largely responsible for our false ideas of mediæval development in style. Thus a "Perpendicular" building may be a widely different structure in detail and in general composition from a building of the "Decorated" period; but in our eagerness for classification we make distinct types of what are in reality links in a chain which, if compared one by one with the adjoining links, are found to exhibit but a trifling variation. The greater changes—the earthquakes of architecture—are as often as not due to the bodily transference of a style that, in the country to which it was native, was in itself the outcome of a gradual growth. I recall these self-evident facts to show that novelty in architecture, wherever it does occur successfully, is not the result of some giant among architects sitting down to his drawing board and saying, "Now for a startler out of my own head!" Still less is it the result of a crowd of pigmy architects setting to work to devise a brood of mis-shapen productions whose title to fame shall be that nothing like them was ever seen before on this astonished earth.

There is a church at Brescia which many of us know—the church of Our Lady of the Miracles. It is a Renaissance structure the front of which contains, I suppose, more carving per square foot than could possibly be exceeded. It is very beautiful, this carving, and one is glad of the exuberance, not sorry for it, as one would be if in the least respect it fell short of perfect dignity. Moreover, as if in satire on the riotous excess of ornament, a cartouche on one of the pilasters bears the Greek motto *Μηδὲν ἄγαν*. I think this should be our own motto to-day. Moderation—or, as one may even call it, *modesty*—is the key-note of true architecture, and it embodies the spirit of the lesson learnt from our thoughts of our brotherhood with the men of old. Modesty in the ethical sense of the word will give a man that unassuming reverence which will set him studying the works of his predecessors; modesty again in his own creations will temper his invention, refusing extravagance and avoiding excess.

So much for our brotherhood with the past—an aspect of our craft which must always be of importance, though it may be overlooked or not seen aright.

Our brotherhood with the men of the day—in fact, with one another—is necessarily of a twofold kind: one sort is the brotherhood in art; the other, as we are dealing with our living contemporaries, is a social affair, and a not unimportant one, of which I will say a few words later. With regard to the artistic brotherhood, it is right to ask ourselves, what is our relationship to one another in this respect, and what use do we make of it? There cannot, of course, be the slightest doubt that the architects of the day directly influence one another in the matter of style. This is due partly to pupilage, in which a master deliberately moulds the young men trained under him, partly to the tendency of hero-worshippers, to imitate, or attempt to imitate, the demigod whom they idolise; also to two reprehensible practices—one, the deliberate adoption in competitions of styles and features which are supposed to be generally successful in competitions of the hour or viewed favourably by the professional



adviser of the promoters; the other—last resource of barren minds—direct and undisguised “sneaking” from the illustrations in the professional journals. Of the last two methods no condemnation can be too strong. That there should be something of what we call fashion in architecture is perhaps only natural. It is an offensive term—a term that carries some sort of condemnation with it—but, on examination, it becomes apparent that in one sense it is nothing more nor less than another name for style. There are at all periods certain tendencies in the air, so to speak, which influence architects in a common direction; but to deliberately and perversely use broken pediments, for instance, because some one you know has just won a competition with a broken-pedimented design, or to endeavour—under a most mistaken idea, by the way—to find favour with an assessor by imitating his own latest invention or craze is, to say the least, a perversion of the proper motives of design, and a violation of our art.

Near akin to this evil practice is the trick of what I have called “sneaking,” from the building papers. These journals, which are, I am quite sure, one of the most remarkable and most important features of our age, give a means of intercommunication of ideas among architects which in the past, and indeed not so very long ago, was practically non-existent. When I speak of sneaking from the building journals, let it be clearly understood that I do not apply the term generally to the derivation of ideas from the illustrations of our brethren’s work, but only to the improper use of them for such a purpose. We know what cribbing is at school. The use of dictionary and grammar does not constitute cribbing, but we apply the term to the employment of a literal translation—that short cut which spares the energies at the expense of the morals. So it is with the case in point. The man who in designing, let us say, a doorway finds his faculties at fault flies to a bound volume of *The Builder*, turns over the pages till he comes to a feature more or less resembling what he wants, and then transfers it undigested to his own drawing-paper, making perhaps a few senseless alterations to salve an uneasy conscience, and possibly missing altogether the spirit of the design by changing the material in which it is to be executed. Such a man is cribbing; and all the time, by a right use of the journal in question, he might have got the help he needed, not perhaps in the form of a lift over his particular difficulty, but in the way of general education. The virtue of this multiplicity of reproduction of architectural drawings, which are nowadays within reach of everybody, is that a man instead of learning merely from his own master during pupilage, and from such works of architecture as he has the opportunity to visit, now has the whole concentrated spirit of the age laid before him; and it is not merely not reprehensible, it is positively a duty to himself and to his creations that he should form his own taste, and feed and cultivate his powers of design, by studying and taking both warnings and hints from the works of his contemporaries. It is a grand thing for a student to practise upon such drawings and reproductions the habit of criticism. A good critic I know is said to be a bad artist; but I expect it is also true that an architect cannot, unless he be a very exceptional genius, be a good designer unless he be also a fair critic. And this is the reason—a poor critic is easily satisfied with mediocrity, or worse than mediocrity, in his own work. He makes his plan, sees that he has got all the accommodation his client asks for, and being no critic, poor fellow! he at once, so to speak, passes his plan; whereas your man with the critical eye sees a blemish or two, and makes a fresh attempt. So with the elevation. Your uncritical man pitches it up anyhow, sees that the roofs work fairly well—or, if he is one of the quaint school, perhaps contrives that they shall not work well—and then, having provided a window for every room, and as many doors and chimneys as are needed, rests content, not knowing or caring whether it is worth while to bring the ever-blessed india-rubber into play and improve both skyline and proportions.

Then there is yet another point about the proper use of our contemporaries' work. The people who sigh for a return to mediæval methods are often forgetful or ignorant what these mediæval methods were. In spite of the obvious and well-marked similarity to one another of those Gothic buildings which belong to a particular period or place, little thought is given to the procedure of which such a similarity is the evidence. A few years ago, in writing a Paper for one of the Allied Societies on some Suffolk churches, I had the good fortune to come upon a copy of the contract for building a church tower in the fifteenth century. The whole document is a very short one, and could be easily written out on one side of a sheet of foolscap. Apparently, it was accompanied by neither specification nor drawings, for it contains within itself information which is obviously intended to take their place. Briefly, the principle upon which this agreement is framed is that the builders are to be guided in different parts of the building by various existing examples in the immediate neighbourhood. Now, in drawing favourable attention to this contract and its methods I may appear to be rather contravening what I said about undisguised robbery from other men's works. But a look at this tower—it still stands tottering at Walberswick, in Suffolk—will prove that, in accepting the churchwardens' directions as to the imitation of ecclesiastical works in the vicinity, the builders by no means lost their own spirit of design; at the same time—and this is the lesson we need—they produced a work which was typical of its time and of its place. There is hardly a building of the thirteenth, fourteenth, and fifteenth centuries that we do not admire for something more than its age; and yet these old-world craftsmen, full as they were of inventive power and of the truest, most real, and most spontaneous art, had none of that vulgar exuberance which in our own day sometimes makes even a big architect go out of his way to rear a building that, locally and chronologically, is a homeless exotic among its surroundings. If, owing to some unconscious spirit of the age, or to our having recourse to the same models for inspiration, or even to a half deliberate imitation, our works evince much that is common to the productions of our neighbours, it is well to consider that in this respect we have our prototype in those Middle Ages for whose return the pedants long. This is difficult and dangerous ground, and one is almost afraid of making the admission so candidly. Perhaps it were better expressed by saying that no architect need be ashamed of his design, if otherwise satisfactory, for the mere reason that it resembles other designs of his contemporaries. One thing is certain: there is a singular modesty in producing a building which, in the matter of both time and place, is exactly congruous to its position; and such modesty is the part of a great artist. Now, a man will not easily tell for himself, not being able to take a bird's-eye view of his own generation, whether he is committing anachronisms or not. In this respect his only safeguard is to avoid extravagances. For all he knows, he may be one of the front-rank men of his age, whom others are to follow; and thus his work, though perfectly harmonious with his epoch when viewed from a later century, will not appear so to him, nor, perhaps, even to his immediate contemporaries. But, as regards topographical fitness in design, it may not be out of place to say a few words, especially to those who may be engaged on small works in rural districts. Let us strive to be local. It is a grand secret of success; it is, moreover, a duty. I am not speaking now of large buildings in large towns, though even to them the principle has its application; but it is profitable to take warning from the constant blunders, committed by architects of all ranks of experience, due to the disregard of local traditions and the proper use of local materials in country districts and small towns. Modern means of communication have made it possible, without always increasing the cost of building, to use almost any materials in almost any place. But there are many cases in which the cost of carriage really does still leave the proper local material the cheapest, and in nearly all instances where local labour is employed



it stands to reason that the materials of the locality will produce the best work. Apart from considerations of cost and workmanship, which, after all, no architect dare disregard, there are sentimental reasons that make it imperative for a designer to give, at least on paper, the local materials and the local traditions, if there are any, a fair trial. It is simply astonishing that the principle here advocated is so seldom adopted. We all know the Model Village. There are examples all over the country of estates upon which a beneficent landlord has caused the smaller homes of his tenantry to be built or rebuilt in a substantial and often uniform manner; but how lamentably seldom has the architect employed studied, even in the least degree, the traditions of the country or district, which, if acted upon, would have made his creations appear a real model village, not, as is generally the case, a village of models. The few exceptions to this rule of impropriety stand out as conspicuous examples, and should lead all who are concerned in such matters to lay their plain lesson to heart.

I have spoken of the way in which, by the successful treatment of modern requirements, our contemporaries bring us help by giving the encouragement of example. Let not the meanest architect despair. There is, alas! another and a sadder way in which, by a sort of back-handed process, the humblest of us can be of service to his brethren—that is, not by our successes, but by our failures. It is hardly too much to say that every building that ever was erected bears a lesson of some sort on its face for those who know how to read it. It is a good plan for learners of all ages to look at every important building in this light. If it is not a success it is either a failure, or one of those insipid nonentities which are neither good nor bad; in fact, a dull building. As you look at it you can ask why it succeeds and why it fails, and if it is one of the dull kind ask yourself what features you would add, or what excrescence you would remove, to make it that harmonious whole which for some fault it has just failed to be. There are many faults which are only found to be blemishes by practice. Let us, then, not curse every man who makes a blunder; maybe Providence set him to do it for our learning. Who knows but we might have done the same thing but for his warning? Architecture is full of pitfalls, and a man who wants to be successful in his designs cannot do better than mark down in his mind a memorandum of those forms and combinations which, in his experience of other's work, do not make for success. I am not speaking of architectural crimes, but of those hundred-and-one little matters which look all right on an elevation—perhaps even passable in a perspective—but which, in all their innocence, are fatal in execution.

Now I come to the third part of my subject, which I may call our social connection with one another. The development of this relationship between architects may be said to be the great feature of the age as regards our profession. Education, it may be urged, is an equally important feature, but I think the two are merged in one; for without the organisation which has been the work of the last fifty years, the education question would never have been started or fostered.

The solidity of the Institute and of the Architectural Association; the number and extent of the Societies in England: finally, and perhaps principally, the system of alliance by which non-metropolitan Societies are connected with the London Body, are evidences of a social unity among the architects of our country which is as gratifying as it is impressive. We are, alas! a frightfully overcrowded profession; there are perhaps more T-squares than commissions in our islands, and, according to all the laws that govern the natural instincts of wild animals, every man's hand ought to be against his neighbour. Instead of such a reign of terror, what do we see? An ever-increasing cordiality of union, an almost daily strengthening of the links which bind the profession together, and, what is more, an effort towards the sound education of our pupils such as never was made before. I am quite aware that

there are those, even among architects, who do not view these recent signs aright—who say, indeed, that our actions are to be interpreted by much less worthy motives, and that our Societies and Examinations, so far from being the index of an inclination to love our neighbours, help our juniors, and benefit our profession, are nothing more nor less than a commercial ring—a machinery by which those who happen to find themselves inside a more or less desirable enclosure are endeavouring to keep others out. They go further, these our enemies; and, wherever they can get an audience, they show by many a fair-seeming argument that by thus banding ourselves together we are introducing into the world of art a unionism which is underbred and tradesmanlike; our Examinations, say they, are an unerring sign of our Philistine decadence, and they prophesy of our rising generation that, nurtured in an unwholesome atmosphere of crude and discursive book-work, it will be a race of ill-bred, inartistic prigs. Where there is any truth in these attacks, let us lay that truth, however small, to heart. The men in opposition have a function to perform for our benefit, and we may as well sift from the chaff some grains of real warning. If ever our Examinations get over-scientific, or even over-exacting, let our Examiners prune away the unnecessary elements; if our pupils prepare for these Examinations in a wrong way, cramming instead of learning, let us remember that we may be to blame, not the Examinations. If our Sessional-Papers are occupied unduly in the less elevating sides and aspects of our craft, let us change our programmes; if the members of our Societies exclude candidates for unworthy or personal motives, let us try to introduce a better feeling; if our central or branch Societies appear to waver for an instant from their true and higher aims, let us vigorously set them on the rails again; but never, never let us weakly give in; never let us acknowledge that our ever-growing system of organisation for union, and of examination for education, is a thing in itself either vicious or defective. A genius may sometimes be a solitary bird; he need not be. Let us for our part be each a genius and something more; let us be genial. *L'union fait la force* even among architects. I speak strongly, for I feel that sometimes we have need to remind ourselves of our unity, to think of it even with passion rather than apathy, and to go forth from our gathering together determined, each of us, to be, not an architect only, but one among the noble army of architects, strong in that sympathetic strength which is transfused from man to man, and which will enable every member of our mighty host, not merely to build his little pile of bricks and draw his little 5 per cent., but to give and (what is sometimes far harder) to accept the helping hand of fellowship.

Let me, in conclusion, draw together these rather scattered remarks, and endeavour to make plain the thread of my intention. Isolation is no more possible to an architect than to a human being as such. Items in a vast congregation, we can neither escape from our obligations to our contemporaries nor from our rich inheritance in the past. Every true architect wears, so to speak, the full uniform of a mighty army, which is as old and as extensive as the human race. Other branches of art and learning may rival our antiquity, at least in appearance; but none have so completely carried down an identity of tradition which, like some unextinguished flame, burns with an unchanged radiance and feeds on the same fuel as of old. This link of union with the past involves a great responsibility. It carries with it the proudly borne burden of a twofold duty—namely, the necessity for patient study and complete dignity. Indeed, study, so far from being an evidence of incapacity, is alike the outcome and the mainspring of the only true dignity. The best architects and the greatest have always humbly followed traditions, and novelty for novelty's sake is the badge either of the tyro, or, paradoxical as it may seem, of an underbred sterility. The cry for a new style argues in the utterer a complete ignorance of the history and true principles of architecture, and the theory that because we cannot see progress in our modern work it is absent proves that the theorist knows



nothing of that fundamental natural law, that true and wholesome growth is, in all departments, almost invariably invisible as a process though measurable as a result. For this reason efforts at invention in art are almost always failures, even when put forth by a Michelangelo. The old Greek doctrine of virtue as a mean, and of excess as vice, is, after all, about the biggest truth that the Greeks have handed down.

I have tried to show that with the men of our own day we have a no less vital unity than with those of the past. We influence one another directly by pupilage, indirectly by example. Such influence is readily open to abuse, and we must beware of appropriating either from ancients or moderns whatever we have not first assimilated. The transference of crude, undigested matter is as fatal in art as in the physical world; but generous criticism, the habit of weighing the value of works of art, and of analysing those elements in them which make for success or contribute to failure, so far from being a fault is the only basis of true design. We need never fear that we are falling into decadence because we find that our designs bear a certain similarity to those of our brethren, if they are sound compositions and pure in detail. The men of the Middle Ages had no such fear; in fact, the very ease with which we can fix alike the date and locality of any ancient building is a sufficient proof that local and chronological congruities were, unconsciously no doubt, primal aims with our brethren of old. I would not be misunderstood to advocate the suggestion that every architect in the first conception of his design should strive to clothe it in a garb as like other contemporary buildings as possible, nor do I for a moment run counter to the obvious truth that new requirements need new solutions. Indeed, it is the conscientious dealing with any hitherto unattempted problem which gives the most legitimate opening for originality, and presents an architect with the most patent opportunity for striking out a new line. Chiefly do I plead that we should not be wanton in the matter of detail.

Lastly, our social relationships, so greatly facilitated and organised of late years, carry with them, as do all privileges, their corresponding duties. The men of the last fifty years, many of whom are with us now, seeing with their own eyes the fruits of their labours, have built up with vast care, untiring energy, and the expenditure of untold time a fabric of association which it is the privilege of our younger generation to cherish with a whole-hearted enthusiasm. And if there be, here and there, a man, even among the ranks of our Societies, who in the back of his mind is in the least degree doubtful about the value of all this organisation—who, with a too prevalent scepticism, asks himself, or even influences his brethren by asking them, whether all these Societies, and examinations, and councils, and committees, and alliances are not either rotten or disingenuous—to that man I would address my few remaining words. I would say to him: Sir, I appreciate your doubts and can understand the reasoning that leads up to them. But such doubts after all do a man small credit. They are bred, when you come to think of it, by a distrust in human nature—a distrust which generally has its roots in distrust of self. Then cast away that unnatural diffidence. Restore alike your self-respect and your confidence in your brother craftsmen. “Every man for himself” is at best a selfish motto; and, what is worse, it bites at the heart of civilisation—it is the war-cry of a savage. Rather let us all, by every means in our power, by personal influence, by individual enthusiasm, by kindly forbearance, by ungrudging sympathy, foster and cherish the welfare and continuance of that great, ancient, and living reality—The Brotherhood of Architects.





9, CONDUIT STREET, LONDON, W., 5 December 1895.

## CHRONICLE.

### THE BUSINESS GENERAL MEETING.

#### Election of New Members, &c.

In the absence of the President, the Chair, at the first Business General Meeting of the Session held 2nd inst., was taken by Mr. Alex. Graham, F.S.A., Vice-President, who conducted the usual quarterly elections by show of hands. Among the new members thus elected are Mr. Falkener and Sir Frederic Leighton, Hon. Fellows, the former of whom is sometimes called "Ephesian Falkener," his MS. Sessional Paper on two pieces of tile tubes from Ephesus and Miletus, bearing the date 18th December 1848, having been preserved in the Institute Library. The Hon. Corr. Members elected are Professor Schröter, of St. Petersburg, whose drawings of some of the principal theatres of that capital were hung round the Meeting-room on Monday; Herr Stübben, of Cologne, whose name and works have been more than once mentioned in the *JOURNAL*; and Herr Heimann, also of Cologne, who was first introduced to the Council by the late venerable Dr. Reichensperger, of that city.

The other business of the Meeting, which was very sparsely attended, was a discussion, brought about by Mr. G. A. T. Middleton [A.], on some of the Papers of Questions set by members of the Board of Examiners in the Intermediate and Final Examinations. A report of Mr. Middleton's observations, with the replies thereto, will be found on a subsequent page, as an Appendix to the Minutes of the Meeting.

### THE PRELIMINARY EXAMINATION.

#### Newly Registered Probationers.

The Chairman announced to the General Meeting of Monday that at the Preliminary Examination held in London, Liverpool, and Newcastle on the 12th and 13th ult. 63 applicants were examined, out of whom 37 passed, and the remaining 26 were relegated to their studies. The total number examined in London was 44, of whom 26 passed; in Liverpool 14, of whom 7 passed; and in Newcastle 5, of whom 4 passed. The names and addresses, with other particulars, of the 96 (including those of 59 exempted applicants) newly

registered Probationers, given in alphabetical order, here follow:—

- ALEXANDER: John Thomas; 18, Spring Terrace, North Shields [Master: Mr. Henry Gibson].  
 ANDERSON: William Kirkpatrick; c/o Mrs. Irving, 6, Stanley Street, Paisley Road, Glasgow [Master: Mr. James Lindsay\*].  
 ANSON: Henry Percy Richmond; 159, Denmark Hill, S.E. [Master: Mr. R. Langton Cole\*].  
 BAILLIE: Richard Douglas; 98, Bonnygate, Cupar, Fife [Masters: Messrs. C. & L.\* Ower].  
 BAILLIE-HAMILTON: George Leslie; Waverton Rectory, near Chester [Masters: Messrs. T. M. Lockwood\* & Sons].  
 BALLARDIE: James Hutcheson de Caynoth; Harlow Manor, Harrogate [Yorkshire College, Leeds].  
 BEAUMONT: Chevalier Worby; 100, Palace Road, Tulse Hill, S.W. [Master: Mr. E. C. Beaumont].  
 BENNETT: Charles Herbert; Birch Vale, near Stockport [Master: Mr. C. H. Heathcote\*].  
 BENTLEY: David Hallam; Lancaster House, Lancaster Park, Richmond, Surrey [Master: Mr. H. F. Trippel].  
 BLOOD: Charles Guy; c/o John Clarke, Esq., 19, Castle Street, Liverpool [Master: Mr. John Clarke\*].  
 BOTTERILL: Austin Barugh; Kew Lodge, Kew Road, Weston-super-Mare [Masters: Messrs. Henry Crisp\* & Oatley].  
 BOURNE: Walter Hargreaves; Sylvan Cottage, Elton Parade, Darlington [Masters: Messrs. Moscrop\* & Clark\*].  
 BRADSHAW: Philip James; c/o J. C. Traylen, Esq., 16, Broad Street, Stamford [Master: Mr. J. C. Traylen\*].  
 BRATT: Ernest William; Victoria Street, Wednesbury, Staffs [Master: Mr. Joseph Lavender\*].  
 BRIDGEN: Charles Henry Edward; Mount Ephraim Hotel, Tunbridge Wells [Masters: Messrs. Truefitt & Watson\*].  
 BRIGHT: Lawrence Lee; 19A, Gedling Grove, Nottingham [Master: Mr. Lawrence Bright].  
 BROOKS: Stanford Morton; Laleham Lodge, Clapham Park, S.W. [Master: Mr. J. G. Robins].  
 BROWN: William Henry; 47, Hereford Road, Bayswater, W. [Masters: Messrs. Wylson\* & Long\*].  
 CAMPBELL: Edmund Archibald; Rosedell, Twyford, near Winchester [Masters: Messrs. Cancellor & Hill\*].  
 CAYLEY: Henry, M.A. Cantab.; Garden House, Cambridge [Master: Mr. C. Hodgson Fowler,\* M.A., F.S.A.].  
 COLLARD: Albert Sydney; 81, Trafalgar Road, Egremont, Cheshire [Master: Mr. Harry May\*].  
 COLLES: Godfrey; 5, Station Road, Cheadle Hulme, Stockport [Master: Mr. Paul Ogden\*].  
 COOPER: Frank; 110, Gilnow Park, Bolton [Master: Mr. Thomas E. Smith].  
 CORMACK: James Noble; 12, Fountainhall Road, Edinburgh [Masters: Messrs. Frank W. Simon & Tweedie].  
 CREWDSON: Henry Douglas; Alderley Edge, Cheshire [Manchester School of Art].  
 CROSBIE: Lawrence Stanley; 35, Grove Hill Road, Camberwell, S.E. [Master: Mr. E. C. Beaumont].  
 DAKERS: Edward; 94, Nethergate, Dundee [Masters: Messrs. C. & L.\* Ower].  
 DAMMAN: Edouard Xavier Aimé; 36, Great Russell Street, W.C. [Master: E. W. Jennings\*].  
 DICKINSON: William Charles; 120, Mildmay Road, Islington [Masters: Messrs. Newman\* & Jacques\*].  
 ELLIS: George Rowland; Stone Lane, Millfield, Peterborough [Master: Mr. Stallebrass].  
 FINNEY: Percy Howard; c/o Messrs. Naylor & Sale, Irongate, Derby [Masters: Messrs. Naylor\* & Sale].  
 FLETCHER: John Alfred; 27, Gerrard Street, Halifax [Masters: Messrs. George Buckley & Son].  
 FORDYCE: George; 76, Union Grove, Aberdeen [Masters: Messrs. Brown & Watt\*].



- GALLOWAY: Robert Alexander; 6, Hermitage Gardens, Morningside, Edinburgh *Master*: Mr. Hippolyte Blanc, A.R.S.A.\*.
- GAMMELL: Kensington; Lichfield House, Weston-super-Mare *Master*: Mr. W. V. Gough.
- GAULDIE: William; 22, Union Place, Dundee *Masters*: Messrs. C. & L.\* Ower.
- GIBBINS: Arthur Everett; Molesworth House, Palace Place, Brighton *Master*: Mr. J. G. Gibbins\*.
- GIBBONS: John Harold; c/o Messrs. T. Worthington & Son, 46, Brown Street, Manchester *Masters*: Messrs. T. Worthington\* & Son\*.
- GIBBS, Thomas Harry; 39, Poland Street, W. *Master*: Mr. A. S. Flower,\* M.A., F.S.A.
- GLOYN: Percival Edward; St. Lavan, Geraldine Road, Wandsworth, S.W. [*Masters*: Messrs. Burch & Forge\*].
- GOODALL: Harry Horuby; 27, Noel Street, Forest Side, Nottingham [*Master*: Mr. A. H. Goodall].
- GOSLETT: Alfred Harold; The Limes, Stamford, Middlesex *Master*: Mr. R. Selden Worthing\*.
- GREEN: William Curtis; 29, Queen's Square, W.C. [*Master*: Mr. John Balcher\*].
- GREGORY: Leolin Charles; 29, Shaftesbury Road, Ravenscourt Park, W. *Master*: Mr. A. Burnell Burnell\*.
- HARLEY: Edwin; 1, Kerfield Crescent, Groove Lane, Cumberwell Green, S.E. *Master*: Mr. J. E. Harley.
- HIGHMORE: Samuel George; The Grange, Poppleton, York *Master*: Mr. W. Hepper.
- HODGSON: Ernest John; 85, On-low Gardens, South Kensington, S.W. *Master*: Mr. H. N. Travers.
- HOPE: Cyril Edward Wolley; 37, Thurstone Road, West Norwood, S.E. *Master*: Mr. A. O. Collar\*.
- HUNTER: James Douglas; 1, Penlerton Gardens, St. John's Park, N. *Master*: Mr. F. Hammond\*.
- KENT: Ivan Means; Rivington, Newmarket Road, Norwich [*Master*: Mr. G. J. Skipper\*].
- KING: Frederick Augustus; 151, Brecknock Road, Camden Town, N.W. Polytechnic School of Architecture, Regent Street, W.
- KISLINGBURY: Arthur Vernon; Parkside, Henden Lane, Finchley, N. Polytechnic School of Architecture, Regent Street, W.
- LAWTON: William George; Wychem, London Road, Salisbury [*Master*: Mr. Fred Bath\*].
- LOBLEY: Frank Joseph; City Engineer, Architect and Surveyor's Office, Norwich *Master*: City Engineer, Norwich).
- LOOS: Julian Henry Keith; Mayfield, 10, Hilerest Road, West Hill, Sydenham, S.E. *Master*: Mr. E. H. Bouchier\*.
- MACKINNON: Walter; 12, Taviton Street, Gordon Square, W.C. *Master*: Mr. C. F. Doll.
- MARSH: Alfred John; Marsholgate House, Sale, Cheshire [*Masters*: Messrs. Woodhouse\* & Willbushby\*].
- MENCE: Henry Frederick; 81, Patshull Road, Camden Road, N.W. *Masters*: Messrs. Yettis\* & Sturdy\*.
- MERILE DE COLLEVILLE: Henry Louis Emile; 21, Chatham Place, Brighton [Brighton Municipal School of Science and Art].
- MILLER: Alfred Thomas; 8, Saxon Street, Dover [*Master*: Mr. Edward W. Fry].
- MILLER: Robert Thomas; 58, Hereules Road, S.E. [*Master*: Mr. W. H. Woodroffe\*].
- MILNE: John; 374, Holburn Street, Aberdeen [*Masters*: Messrs. Matthews & Mackenzie].
- MILES: Roderick John; 49, Welbeck Street, Mansfield [*Master*: Mr. R. Frank Vallance\*].
- MURPHY: Bailey Scott; 11, McLaren Road, Edinburgh [*Master*: Mr. Henry F. Kerr\*].
- NICOL: George Salway; Elmdon Lodge, Acocks Green, Birmingham [*Masters*: Messrs. Essex,\* Nicol,\* & Goodman].
- OGILVY: Gilbert Francis Molyneux, B.A.Oxon.; 47, Castle Street, Edinburgh [*Master*: Mr. Hippolyte, Blane, A.R.S.A.].
- OMAN: William Campbell; 107, West Green Road, Tottenham, N. [Mayo School of Art, Lahore].
- OVERBURY: Thomas; 6, Well Walk, Clarence Street, Cheltenham [*Masters*: Messrs. Middleton, Prothero, & Phillott].
- PEARSON: Harry John; 27, Villa Road, Brixton, S.W. *Master*: Mr. Arthur Vernon.
- PENTLAND-SMITH: James Buchanan; 14, Claremont Terrace, Edinburgh *Master*: Mr. John Lumsdaine.
- PIERCY: Arthur Raymond Pratt; The Villas, Stoke-on-Trent *Masters*: Messrs. Wood & Hutchings\*.
- PIRIE: James Masson; 341, Holburn Street, Aberdeen *Masters*: Messrs. Matthews & Mackenzie.
- QUAYLE: Walter Osborne; Bay View, Lezayne Mount, Ramsay, Isle of Man [Peel Grammar School].
- RAINEY: Hugh Beach; Holwell Vicarage, Burford, Oxon *Master*: Mr. C. Kemshad.
- RUSSELL: Thomas Herbert, B.A.Cantab; 34, Upper Hamilton Terrace, St. John's Wood, N.W. *Master*: Mr. John Balcher\*.
- RUTHERFORD: Alistair McIntosh; 32, Argyll Place, Aberdeen *Masters*: Messrs. Matthews & Mackenzie.
- SCRIVENER: Edward Douglas Mountford; The Cedars, Newcastle, Staffordshire *Masters*: Messrs. R. Scrivener & Sons.
- SEFTON: Henry Webster; 13, Chadwick Street, Bolton *Master*: Messrs. Prichard\* & Gass\*.
- SENIOR: Arthur Ernest; 7, Belgrave Parade, Newcastle-on-Tyne *Master*: Mr. J. W. Frazer\*.
- SIDLEY: John; 160, High Street, Mortrose *Master*: Mr. John Shaw.
- SINGERS: George; 11, Edvilere Street, Aberdeen *Master*: Mr. James Scuttar.
- SKIPTON: Horace Pitt Kennedy; Glendernot, Cavendish Road, Sutton, Surrey *Master*: Mr. R. Langton Cole\*.
- SMITH: George Thow; 11, Gladstone Place, Aberdeen *Masters*: Messrs. W. & J. Smith & Kelly.
- SMITH: James; 250, Great Western Road, Glasgow *Master*: Mr. John B. Wilson\*.
- SMITH: William Ryle; Norwood, Scafield, Broughty Ferry (High School, Dundee).
- SOAMES: George Alfred; Fernleigh, Westcombe Park Road, Blackheath, S.E. *Masters*: Messrs. Newman\* & Newman\*.
- SPARROW: Reginald George; Claremont, The Park, Nottingham *Master*: Mr. Sutton.
- STONEBRIDGE: Walter Butler; Oakley, Bedfordshire *Master*: Mr. George Highton\*.
- VAUSE: Fred; West Cliff Station, Whitby [*Master*: Mr. E. H. Smales\*].
- WARD: Lloyd Foster; 41, Trafalgar Road, Mosely, Birmingham *Master*: Mr. W. Henman\*.
- WATSON: Walter Crum; 9, Radnor Place, W. [*Masters*: Messrs. Alfred Waterhouse\* & Son\*].
- WEST: Daniel; 30, Clarence Parade, Southsea [*Master*: Mr. C. W. Bevis\*].
- WHIDDINGTON: Henry Morgan; 71, Queen Street, Cheapside, E.C. [*Master*: Mr. W. H. Duffield\*].
- WILKINS: Victor; 41, Cawley Road, Victoria Park, N.E. [*Masters*: Messrs. Truefitt & Watson\*].
- WINGATE: Alexander; 4, Bowmont Terrace, Glasgow, W. [*Master*: Mr. Miles S. Gibson].
- WOORE: Joseph Alfred; 39, Wilfred Street, Derby [*Masters*: Messrs. Naylor\* & Sale].

The asterisk (\*) affixed to the name of a Master denotes a member of the Institute.

For this Examination there were 134 applicants (ten more than stated on page 17), of whom 59

(three more than previously stated) were exempted from sitting for any of the subjects of the Examination. Four others did not attend, and their fees have been returned; while eight are to come up for the Preliminary Examination in June 1896.

#### The Tribunal of Appeal: London Building Act 1894.

The Secretary of State for the Home Department has appointed Mr. A. A. Hudson, Barrister-at-Law, of No. 5, Paper Buildings, Temple, to be a Member of the Tribunal of Appeal constituted under section 175 of the London Building Act 1894, in succession to the late Mr. D. Cubitt Nichols. The Tribunal consequently now consists of Mr. Arthur Cates, appointed by the Council of the Institute, Chairman; Mr. Penfold, appointed by the Council of the Surveyors' Institution; and Mr. Hudson, appointed by the Home Secretary.

#### The Trinity Hospital or Almshouses.

On the recommendation of the Art Standing Committee, the Council passed a Resolution, on the 18th ult., to the effect that every attempt should be made to save the Trinity Hospital or Almshouses at Mile End from destruction; and a letter appeared in *The Times*, on the 25th ult., in which this decision was supported by Mr. Penrose, F.R.S., as President of the Institute, and Mr. Waterhouse, R.A., as Chairman of the Art Committee. Letters were also addressed to the Master and Deputy-Master, and to the "Elder Brethren," of the Corporation of Trinity House. A Memorial was further submitted, as follows:—

*To the Charity Commissioners for England and Wales.*

GENTLEMEN,—The Council of the Royal Institute of British Architects, incorporated under Royal Charters in the seventh year of William IV. and the fiftieth of Victoria, have been informed that it is the intention of the Charity Commissioners to hold an inquiry for the purpose of considering certain charitable endowments administered by the Corporation of Trinity House. They have learnt that a scheme comprising certain alterations in the method of dispensing the Charity is already before the Commissioners; and that one of the matters contained therein is a suggestion for the demolition of the Trinity Hospital or College at Mile End, in the East of London.

We desire to express, on behalf of the Royal Institute of British Architects, our earnest hope that the Commissioners will withhold their consent from any proposal involving the demolition of the buildings in question. There is strong evidence to show that they are the work of Sir Christopher Wren, possessing very considerable architectural and historical interest, and that they represent, in fact, the only example of Sir Christopher Wren's work now remaining in East London. We venture, therefore, to think that any evidence, or other circumstances, which could warrant their destruction must necessarily be exceedingly strong.

A Committee acting on behalf of the Institute have recently examined the buildings and reported that they are in excellent preservation. Their sanitary defects are no more than may be found in other old buildings of the kind, the prominence now given to such defects being due in a great measure to the recent development of

sanitary science and the general advance in such knowledge. It is these sanitary defects, we are informed, which are being used as an argument for the demolition of the old Hospital; but they can easily be remedied, in our opinion, at a slight expenditure. We therefore cannot but believe that the Charity Commissioners will withhold their sanction from any scheme involving the destruction of the old Trinity Hospital: an historical monument of unique interest, forming in the East of London one of those architectural landmarks which, if destroyed, can never be replaced.

The Council of the Royal Institute of British Architects are indeed so deeply impressed with the importance of preserving these buildings that they ask the favour of being allowed to appear before the Charity Commissioners, and to be heard through their appointed representatives, in defence of the same, at the inquiry to be held on Wednesday the 27th November.

The foregoing Memorial, which was not under seal, was signed by the President, by Mr. Waterhouse, Mr. Macvicar Anderson, and the Hon. Secretary of the Institute; and countersigned by the Secretary.

The Trinity Corporation having submitted a scheme to the Charity Commissioners for the disposal of the site of the Almshouses or Hospital for building purposes, and the creation of out-pensions, a public enquiry was held 27th ult., at the Trinity House, by Mr. G. S. D. Murray, an Assistant Charity Commissioner, with the view of ascertaining the facts of the case, particularly as regards the charitable endowments available for the support of the Hospital.

The scheme was opposed by several Societies and individuals, the Institute being represented at the enquiry by the President and Mr. Macvicar Anderson; and also by Sir Frederic Leighton, whose admirable letter to the Chairman of the Charity Commissioners is worth recording:—  
 "Although the state of my health forbids my attending any public meeting or taking part in any public discussion, I am extremely anxious that my absence from to-morrow's meeting should not be attributed to indifference on my part to the grave matter before it. I feel, on the contrary, the keenest anxiety in regard to it, and should deplore more deeply than I can say the destruction of the most delightful and characteristic group of buildings which is to-day menaced—a relic unique in its artistic character, and, unlike many relics, still in the full efficiency of its usefulness; a relic, too, which surely the historic associations connected with it should keep in the reverence of a patriotic people."

The enquiry elicited the important fact that ample funds exist for the maintenance of the charity. In addition to the endowments which are specially applicable to the Almshouses, Mr. Kent, Secretary to the Trinity Corporation, stated "that, apart from the funds which were dealt with by the Public Accounts Committee, by Parliament, or by the Charity Commissioners,



"the Trinity House had an income of something like £8,000 a year," and it was shown that less than one-half of this available income was required to supplement the special endowments. This portion of the case may be conveniently summarised in the words of the Assistant Commissioner, who stated that "it might be taken from the evidence given that there was ample money to keep up the almshouses."

It was further elicited, from the report of the Surveyor to the Trinity Corporation, that the structure of the almshouses is sound and in a substantial state of repair; evidence which was subsequently confirmed on behalf of the Institute. That it is desirable to carry out certain sanitary improvements was admitted; but these were shown to be comparatively of an inexpensive character. Thus it was demonstrated that neither lack of funds, nor structural weakness, nor sanitary defects could be pleaded as an apology for the demolition of the buildings.

The President bore testimony to the architectural features of the Hospital being the work of Sir Christopher Wren, and of the great value of the buildings to architectural students as a classic example of the great architect's work.

Mr. Macvicar Anderson further testified, from a careful examination of the buildings, to the simplicity, quaintness, and picturesqueness of the architecture, producing a result no less unique than charming and beautiful. The removal of the buildings he would regard as an irreparable loss to the cause of art. On the second day of the enquiry the Surveyor to the Almshouses stated, in reply to leading questions from the Secretary to the Corporation, that the houses were unfit for human habitation; an assertion which was refuted by Mr. Macvicar Anderson, who remarked that it seemed to him, to say the least, most extraordinary that although the Surveyor had by his own admission acted in that capacity for 30 years, and had quite recently reported to the Elder Brethren as to the satisfactory condition of the structure, he appeared to have only that morning awakened to the idea that the Almshouses were not fit for human occupation! That the buildings were admirably adapted for their purpose was obvious, Mr. Macvicar Anderson stated, not merely as the result of personal observation, but as demonstrated by the robust and healthy character of the inmates, to whom infectious disease was unknown, and who lived to a great age.

Evidence was given on the part of Societies who opposed the scheme, by Mr. Shaw Lefevre, Mr. Ashbee, Mr. Basil Holmes, and Mr. Thackeray Turner, as well as by Mr. Spencer Charrington, M.P., on behalf of his constituency, and by Mr. Kerwyn on behalf of the Vestry and of the occupants of the Almshouses, who, it may be stated, had already presented a memorial in opposition to the scheme.

Having regard to the weakness of the case for demolition, and to the importance of the rebutting evidence, as well as to the keen interest evinced by the public in the enquiry, it may be reasonably anticipated that the decision of the Charity Commissioners will be satisfactory to the opponents of the scheme. The courtesy of the Assistant Commissioner was only equalled by the lucid grasp which he exhibited of the subject of the enquiry; and although he studiously maintained the strictest impartiality, the words in which, at the conclusion of the enquiry, he embodied a suggestion, "in the event of the Corporation's desiring to retire from their proposals," or in the event of the Commissioners' "not sanctioning them," may be taken as not altogether devoid of significance.

That the result of the enquiry may be the maintenance of buildings so admirably adapted to their purpose, and so interesting and valuable from an artistic point of view, all who have taken an intelligent interest in the matter must ardently desire.

#### The Worshipful Company of Plumbers.

The Banquet and Conversazione held at Saddlers' Hall on the 27th ult., when the Lord Mayor and the Sheriffs of London, the ex-Lord Provost of Aberdeen, and a large gathering of Mayors from all parts of England were entertained by the Master and Wardens of the Worshipful Company of Plumbers, were of an eminently agreeable character. The President and several members of the Institute were among the guests, including Mr. F. W. Porter, Master of the Saddlers' Company; Mr. John Taylor, C.B., of Her Majesty's Office of Works; Mr. P. Gordon Smith, Architect to the Local Government Board; Mr. J. Douglass Mathews, Chairman of the Guildhall Library Committee; Mr. Thomas Blashill, Architect to the London County Council; and others.

Among the more distinguished persons present were Sir Algernon Borthwick (now Lord Glenesk), whose health was drunk as the first plumber who had entered the House of Lords; Lord Shand; Sir Hugh Owen, K.C.B., Permanent Secretary to the Local Government Board; Sir Walter Foster, M.P.; Sir George Kekewich, K.C.B.; Sir Edwin Galsworthy; Sir Thomas Roe; and a former Lord Mayor, Sir Stuart Knill, Bart. The Presidents of the Surveyors' Institution, of the Institute of Builders, of the Society of Municipal and County Engineers, of the Society of Medical Officers of Health, and a Vice-President of the Architectural Association, were also present.

#### A Teaching University for London.

On the 28th ult. Lord Kelvin headed a deputation to the Duke of Devonshire for the purpose of urging the Government to introduce, without further delay, a Bill on the lines of Lord Playfair's

University Commission Bill 1895, appointing a Statutory Commission to carry out the recommendations of Lord Cowper's Commission, with an additional clause to the effect that there should be a right of appeal to the Privy Council for the disallowance or alteration of any statute or ordinance proposed by the suggested Statutory Commission previous to such ordinance being laid before Parliament for confirmation. The deputation included representatives of the Royal Commission presided over by Lord Cowper, delegates from the Senate, the Convocation, and the Committee of Graduates of the existing University, from University College and King's College, from the London Medical Schools, from the Royal College of Physicians and the Royal College of Surgeons, and from various other Societies interested in higher education. Lord Kelvin explained that the clause it was proposed to introduce was strictly in accordance with precedent Acts of similar tenor, especially the Oxford and Cambridge Act 1877 and the Scottish University Act 1889. Appeals to the Privy Council would not be on points of law, but on questions of policy, which would naturally have been referred as in accordance with precedents to a University Committee of the Privy Council appointed *ad hoc*.

Professor Rücker, speaking for the members of the Senate, said that they would not approve a scheme intended to obtain some new advantage unless satisfactory provision were made for the continuance of the work at present undertaken by the University. They believed, however, that the impartial examination of all candidates, no matter where educated, for a degree could still be carried on under the Gresham scheme; therefore they supported the memorial. The safeguards proposed were manifold. A new Senate, on which many interests and institutions were represented; a Board specially appointed to superintend the examination of external students; the assertion of the fundamental principle that the same standard of knowledge should be exacted from all candidates for degree; the power to mingle with the Professors of the University other external examiners who would have no real or supposed bias in favour of London students; an opportunity given to those who thought those safeguards insufficient to lay their views before a Statutory Commission which had power to make minor modifications in the scheme; and, finally, the right to appeal from the Statutory Commission to the Privy Council. If the scheme of the Gresham Commissioners were carried out, the Charter of the University must be modified; and to this the Senate would consent without making a claim to review the decisions of the Statutory Commission or the Privy Council thereafter.

The Duke, in reply, admitted the highly representative character of the deputation, not only of teaching bodies more or less connected with the

University, but of graduates and other members. They could not profess, however, to represent fully the opinions of students drawn from the whole British Empire, who could never avail themselves of facilities for university teaching in London, but who in the past had derived valuable guidance from the University in their studies, and highly prized recognition of their attainments. He doubted whether, after all precautions, the University would be as accessible to this class of student as before. He could not commit the Government to any course. He had desired, before bringing the matter before his colleagues, to learn the views of those represented by the deputation, but it must also be his endeavour to learn the opinions of the external students above referred to. His Grace then referred to the differences of opinion on the scheme which had been expressed by Convocation. It appeared to him a somewhat strong proceeding that, in order to create a Teaching University for London, a constitution should be imposed upon the present University against the will of Convocation, which, under its existing Charter, possessed the right of imposing a veto upon any alteration in its constitution.—It was explained to his Grace that Convocation had expressed its agreement to the scheme by a majority of two to one.—The Duke then referred to certain amendments drawn up by a section of Convocation, which were stated to be necessary in order to give effect to the scheme, and made further allusion to the opposition of a large body of country graduates. He thought it desirable that they should by every means in their power endeavour to conciliate the opposition to the scheme. It was possible that a very small amount of opposition in the House of Commons to the Bill would be fatal to its passing in the next Session.

*The Times* of the 29th ult., commenting on the reply to the deputation, says: "If unanimity, or 'anything approaching to it, is to be sought for 'as the result of this inquiry before the reforms 'unanimously demanded by the friends of higher 'education in London are initiated, the establishment of a teaching university here, for which 'educational reformers have been struggling for 'years, will be substantially relegated to the next 'generation. The Parliamentary difficulties in 'the way of passing a Bill that meets with any 'strenuous resistance need not be insisted upon. 'The present Government, supported by an immense majority, and including so many distinguished statesmen, will find it no hopeless 'task to overcome such difficulties, especially as 'the Opposition are committed by Lord Playfair's 'Bill to this very settlement of the question. 'But the problem will never be solved if the 'party of resistance are encouraged by being told 'that the acquiescence of the country graduates 'is indispensable, and that a measure brought in



"by the strongest Administration of the century  
"cannot be passed if a handful of malcontents  
"oppose it."

*The Modified Reservoir at Philæ* Vol. II. p. 621.

The protest of the Académie des Beaux-Arts (Institut de France) against the alleged proposal to submerge the island of Philæ, which was made last July, has received the following Ministerial reply:

Paris le 11 octobre 1895.

MONSIEUR LE SECRÉTAIRE PERPÉTUEL. Vous m'avez fait l'honneur de me transmettre, le 23 juillet dernier, un vœu exprimé par l'Académie des Beaux-Arts, renouvelant une démarche antérieure de l'Institut de France. Le Gouvernement de la République a été très sollicité de prendre en mains la défense des monuments de Philæ, dont la conservation courait risque d'être mise en péril par le projet de construction d'un barrage sur le fleuve, à Assouan.

Cette importante affaire a été, depuis le début, l'objet de mes constantes préoccupations, et je n'ai pas cessé de la suivre avec une sollicitude attentive. Les derniers renseignements que je viens de recevoir et que j'ai l'honneur de porter à la connaissance de l'Académie lui paraîtront, sans doute, comme à moi, de nature à calmer toutes les inquiétudes.

L'émotion légitime soulevée dans le monde de l'architecture et des artistes par ce projet, les protestations et réclamations présentées de toutes parts, notamment par le Gouvernement français, et, en Égypte même, par la Direction du Service des Antiquités, avaient enfin amené le Gouvernement Égyptien à ne pas pour suivre, pour le moment du moins, l'exécution du plan primitivement adopté. Le Service des Travaux publics offrait en effet récemment au Service des Antiquités de réserver la question jusqu'au jour où, les temples de Philæ se trouvant entièrement déblayés et réparés, le Sous-Secrétaire d'État aux Travaux Publics et le Directeur Général du Service des Antiquités examineront la situation et, d'un commun accord, décideront alors quel parti il y a lieu de prendre.

Il a donc été convenu entre M. Garstin et M. de Morgan que, sous la direction de ce dernier, les monuments de Philæ seraient préalablement dégagés et consolidés, au moyen de crédits spéciaux mis à sa disposition par le Ministère des Travaux Publics. Le danger qui menaçait ces précieux restes de l'Antiquité se trouverait ainsi écarté, et il semblerait qu'aucune difficulté ne dût s'élever à l'avenir entre les deux Administrations. Au reste, les ingénieurs anglais ont eux-mêmes reconnu le préjudice que causerait à leur réputation la construction du barrage. Ne serait-il donc pas permis de supposer que cet arrangement, destiné à ménager certaines susceptibilités, cacherait aussi l'intention d'abandonner le premier projet?

Enfin, M. Garstin y renoncerait sans doute définitivement, lorsqu'en présence des temples de Philæ restaurés et sur les lieux mêmes, il recherchera, avec M. de Morgan une solution qui, tout en favorisant la distribution des eaux du Nil, conserve désormais ces monuments à l'admiration des visiteurs.

Je suis heureux, Monsieur le Secrétaire perpétuel, de vous communiquer les décisions nouvelles du Gouvernement Égyptien, qui réalisent le vœu exprimé par l'Académie.

Agréez, Monsieur le Secrétaire perpétuel, l'assurance de ma haute considération.

*Le ministre de l'instruction publique, des beaux-arts et des cultes.*

R. POINCARÉ.

The French Minister's letter given above, which is reprinted from *L'Architecture* of the 23rd ult.,

requires but little comment. It would be, perhaps, rash to assert that the English engineers who advised the Egyptian Government on the subject had recognised the necessity of not submerging the island of Philæ long before the Minister of Public Education in Paris knew anything about the matter; but a few references to the two preceding volumes of this JOURNAL will suffice to show that the British Society for the Preservation of the Monuments of Ancient Egypt had been at work [see Vol. I. p. 608, 23rd August 1894] eleven months before the Académie des Beaux-Arts, whose letter is dated 23rd July 1895, thought fit to move in the matter. Further, Mr. W. E. Garstin's Memorandum upon the modified project for the Philæ-Assouan Dam was published in *The Times* of the 27th November 1894 [Vol. II. p. 77]; and it may be seen from Mr. Somers Clarke's report [Vol. II. p. 535] that more than twelve months ago "the Egyptian Government pledged itself not to overwhelm the island of Philæ." One thing, however, is certain: that a reservoir must be constructed either in the Nile itself, or on a site adjacent to its banks, if the progress and prosperity of a large part of Egypt and its population are to be assured—a necessity which was discussed in this JOURNAL by Mr. Cope Whitehouse, of New York, and M. Edouard Naville, of Geneva, in July and August 1894.

#### Experimental Research in Vienna.

A series of experiments, having for their object the testing of arches of varying degrees of span, and the strength and elasticity of the materials employed in their construction, has been recently carried out in Vienna under the auspices of the Austrian Society of Engineers and Architects. No less a sum than £3,200 was spent on the operations, the whole of which was borne by the Society and a few public-spirited supporters. An exhaustive report on the results of the experiments has been drawn up and published in the *Zeitschrift des Oesterreichischen Ingenieur- und Architekten-Vereins* 1895, Nos. 20-34, which may be consulted in the Library. The report is divided as follows:—(1) Tests of seventeen floor arches with spans of 4.76, 8.86, and 14.76 feet of all kinds of floor construction; (2) tests of two culverts of 32.8 feet span and one-tenth rise; (3) tests of four bridges of 75 feet span, one-fifth rise. Particulars of the foregoing are accompanied with a full record as to deflection and other details. (4) An exhaustive series of tests to determine the strength and elasticity of all materials used in the arches; (5) a theoretical calculation based on the results obtained; (6) conclusion from the results in respect of theory and construction. Having regard to the importance to the building trade of the conclusions brought out in these experiments, the Society are anxious to give the widest publicity to

the report, and announce a reprint in a separate form, which may be obtained for 10s. from the office of the *Zeitschrift*, Vienna I. Eschenbachgasse 9.

#### Additions to the Library.

*Farm Buildings: Their Construction and Arrangement*, by A. Dudley Clark, F.S.I., has been presented by the publisher [London: B. T. Batsford]. This is a second and revised edition of a useful work which has been adopted as one of the text-books for the examinations of the Surveyors' Institution. The third edition of *The Law relating to Building, with Precedents of Building Leases and Contracts, and other forms connected with Building and the Statute Law relating to Building, with Notes and Cases under the various Sections*, by his Honour Judge Emden, assisted by Henry Johnston, has been received from the publishers [London: Knight & Co.]. This edition is much shorter than its predecessor, although it contains all the important matter of the second edition with the law brought down to the present date; a result which has been obtained by the author's searching revision of the text, and condensation of the statements of cases therein.

Mr. D. H. S. Cranage has forwarded the second part of his *Architectural Account of the Churches of Shropshire*, dealing with the Hundred of Munslow. This part is bulkier than the former one, and shows some improvement in the matter of photographic illustration. The ground plans of the most important churches have been drawn by Mr. W. Arthur Webb [A.], and the plates have been reproduced from photographs specially taken for the work by Mr. Martin J. Harding [Wellington: Hobson & Co.].

The following works have been received from their respective publishers:—*Science and Art Drawing: Complete Geometrical Course, consisting of Plane and Solid Geometry, Orthographic and Isometric Projection, Projection of Shadows, the Principles of Map Projection, Graphic Arithmetic, and Graphic Statics*, by J. Humphrey Spanton, Gold Medallist of the Royal Academy [London: Macmillan & Co.]; and *Notebook on Plane Geometrical Drawing, with a Chapter on Scales, and an Introduction to Graphic Statics*, by Robert Harris, Art Master at St. Paul's School [London: George Bell & Sons].

Mr. T. Mellard Reade [F.] has presented the following pamphlets, of which he is the author, the first having been written in conjunction with Mr. T. W. Davies: *Description of the Strata exposed during the Construction of the Seacombe Branch of the Wirral Railway*, reprinted from the *Proceedings of the Liverpool Geographical Society*, 1894-95; *The Moraine of Llyn Cwm Llweh, on the Beacons of Brecon*; *Note of Further Glacial Striae at the Quarry*, Little Crosby, also re-

printed from the *Proceedings of the Liverpool Society*; *Expansion Theory of Mountain Evolution and Pitted Pebbles in the Bunter*, originally contributed to the *Geological Magazine*.

Mr. Henry Frowde, the publisher, has forwarded Part VI. of *Archæologia Oxoniensis*, which contains, among other interesting matter, an additional note by Mr. J. Park Harrison to his article on "The Architecture of the Bodleian Library and the Old Schools," published in the previous number.

The *Archæological Journal* (vol. lii. No. 2; 2nd series, vol. ii. No. 3) contains a Paper by Mr. Somers Clarke entitled "Philæ: The Nubian Valley and the Modified Nile Reservoir," and "Notes on Egyptian Colours," by Mr. F. C. J. Spurrell.

The Massachusetts Institute of Technology has forwarded the *Technology Quarterly* (vol. viii. No. 2), and the *Annales de la Société d'Archéologie de Bruxelles* (vol. ix. Part IV.) has been received from the Society. The first part of the twenty-eighth volume of the *Transactions of the Surveyors' Institution*, containing the President's Address, at the opening of the current Session, has been presented by the Institution.

## REVIEWS. XXXIV.

(95)

### TWO PRACTICAL TREATISES.

*Drainage Work and Sanitary Fittings.* By William H. Maxwell, Engineer and Surveyor's Offices, Leyton Urban District Council. Reprinted from "The Surveyor and Municipal and County Engineer." Fcp. 8o. Lond. 1895. Price 1s. net. [The St. Bride's Press, Limited, 24, Bride Lane, Fleet Street, E.C.]

*Trusses of Wood and Iron. Practical applications of Science in determining the stresses, bracing weights, safe loads, scantlings, and details of construction, with complete working drawings,* by William Griffiths, Surveyor, Assistant Master, Tranmere School of Science and Art, 8o. Lond. 1886. Price 4s. 6d. [Crosby Lockwood & Co., 7, Stationers' Hall Court, Ludgate Hill, E.C.]

The former of these books consists of 74 pages of illustrated notes on drainage and 52 pages of advertisement. The phrase "sanitary fittings" must have been added to the title for the sake of euphony. In the words of the preface—if I may venture to quote them—the book is intended "to be a handy little book for the use of the young architect or engineer, who has to design, and the builder, who now has to execute, the drainage of his buildings under the closest supervision and in strict accordance with the most modern principles, as has been my endeavour herein to briefly explain."

But the book is better than its preface. Whether, however, there was any need for republishing the



articles in book form is another question: the theme is far from new, and the treatment is slight. The chapters entitled "Various Kinds of Joints 'in Drain Pipes,'" "The Laying of Drains," and "On the Testing of Drains" are, perhaps, the best; but intercepting traps, the disconnection and ventilation of drains, and discharge from sewers are also considered. The author is not quite sure as to the utility of traps. On page 25, after stating that "a continuous current of air should always be passing through the drains from end to end," he boldly adds, "The principle of trapping is 'opposed to this, and therefore is not a good one.' On pages 5, 58, and 59, however, he writes as if he had never doubted the correctness of the principle. The same forgetfulness is noticeable in his remarks on Portland cement for drainage works. On page 6 we are told that "the proportions of 'cement, or of lime to sand, should not exceed  $2\frac{1}{2}$  of clean sharp sand to 1 by measure of 'ground \* Portland cement or lias lime"; while on page 37 we learn that "Portland cement (used 'neat) is the proper material for jointing stone-ware pipes."

Iron pipes are mentioned, but the weights for different diameters are not given. Nothing is said about the different kinds of gullies for receiving the discharge from waste pipes, &c., or of yard gullies; and, as I have already hinted, sanitary fittings (by which, I suppose, baths, lavatories, sinks of various kinds, and water-closets are meant) are not described in the body of the book, although named in the title. But what can you expect for a shilling? As far as it goes, the book is a good one, and can be recommended to students and builders. It is only a little book, but—there is no padding in it.

My notice of *Trusses of Wood and Iron* must be brief, for the review of a book nine years old comes either too late or too soon: the book has lost the bloom of freshness and novelty, and has not gained the charm of antiquity. Mr. Griffiths' book consists of diagrams, details, calculations, and descriptions of a king-post roof-truss 25 feet span, a king-bolt roof-truss 35 feet span, a collar-beam roof-truss 25 feet span, and a trussed-rafter roof-truss 25 feet span. The plates are excellent, and the calculations and descriptions simple and to the point. The details, I may say, show the usual king-post and collar-beam trusses of wood with iron bolts and straps, a king-bolt truss of wood with iron king- and queen-bolts, &c., and a trussed-rafter truss with wood rafters, wrought-iron tie-rods and truss-rods, and cast-iron struts. It is not the author's fault that wood-and-iron trusses of the nature of the last two are less frequently used nowadays than when his book was written. The theoretical part of the book,

however, is still useful, and students will find it a simple guide to the methods of ascertaining graphically the stresses in ordinary roof-trusses.

Manchester.

GEORGE L. SUTCLIFFE.

(96)

## BUILDING LAW.

*A Handy Book on the Law concerning Owner, Builder, and Architect.* By James Walter Smith Esq., LL.D., LL.B., B.A. (Owner), of the Inner Temple, Barrister-at-Law. Sm. 8s. Lond. 1895. Price 1s. net. (Effingham Wilson & Co., 11, Royal Exchange, E.C.)

*Light and Air: A Treatise for Architects and Surveyors.* Shows in a Tabular Form what constitutes Ancient Light; How the Right is acquired; How the Right may be lost; Injunction to Ancient Light for which there is no Remedy; Right of Easement of Servient and Dominant Owners. Also Methods of estimating Injuries. And further sets forth what the Surveyor of the Dominant Owner will try to prove, and special points to which the Surveyor of Servient Owner should direct his attention, with outline of matters necessary to be remembered in preparing for the Trial. Together with the full Law Reports of the most recent cases on the subject, and abridged by and les taken from some of the latest cases in which the author has been engaged. Third Edition, revised, with additional cases, &c. With 26 Diagrams. By Bonister Fletcher, F.R.I.B.A., Professor of Architecture and Building Construction, City College, London. Fcp. 8s. Lond. 1895. Price 6s. 6d. B. T. Butterfield, 94 High Holborn, W.C.

This little book is intended to make plain, to any reader who will devote the necessary thought to it, a very complicated and highly technical subject; and if very much which appears in the book is familiar to those whose practice involves fighting out in the Court or in the Arbitration Room the many complex issues which a building contract carries with it, to Mr. James Walter Smith belongs the credit of very tersely and intelligently summing up the general law as it concerns owner, builder and architect.

On page 12 Mr. Smith states that a builder is expected to know the local laws affecting his trade, and this no doubt fixes the primary responsibility on the builder, although, as Mr. Smith adds, it does not necessarily exempt the architect (if any) or the owner from seeing that the local requirements are complied with. A statement on page 13, that "if the house is injured by careless 'underpinning, the way blocked or the light' (of a neighbour's house) 'impeded by the new building, both owner and builder are liable,' would not, I think, be acquiesced in by a builder; he would very reasonably urge that the law of light and air hardly came within the province of a builder; and that, if it did, perhaps it would become his duty to see that the ground rent was one which would or would not exempt the building owner from future financial loss.

On page 15 I have a personal satisfaction in finding that Mr. Smith, a barrister, says, speaking of the late "Heads of Conditions of Builders'

\* The italics are mine.—G. L. S.

"Contracts," that they "can hardly be improved on," and on page 30 he speaks of those same Conditions as that "very excellent contract." So much for the Conditions which we were informed during the recent discussion at the Institute were a subject almost of mirth to a lawyer.

Mr. Smith enters the list with Vitruvius at page 16, in an attempt to define "an architect," but a lawyer-like care distinguishes his description from that of his predecessor. Mr. Smith says an architect is one *who professes* (the italics are mine) "a knowledge of building in general, including construction, material, sanitation, ornamentation and Art" (with a capital A), "and must be able to prepare plans, drawings, specifications and estimates for the buildings on which he is engaged, and to superintend their construction in accordance with the designs." He "also professes to possess some scientific knowledge, and such legal knowledge, both local and general, connected with his business as can be expected of a man who is not a lawyer." And yet I have heard it said that 5 per cent. is an extravagant remuneration for an architect's services! Mr. Smith very properly, however, eases one's mind somewhat when he proceeds: "When I say building 'in general,' I do not mean that an English architect is bound to be able to construct a palace of bamboo suited to a Malay rajah, or to erect a hall in the style of the Mosque at Cordoba, though he would be proud to do these things if he could." . . . And he must not be a stranger to classic architecture or that of the countries of Western Europe." All this is very refreshing, and architects in general will be grateful to Mr. Smith for thus defining their attributes.

Mr. Smith's remark on page 23, that the architect "must take care that the proposed work does not apparently interfere with rights of light or of support," &c., is of service, and the truth of it was illustrated by a case tried two or three years ago, in which a building owner successfully sustained an action against his architect for proceeding with a building which interfered with the light of a window opposite, which interference had led to legal proceedings in which the building owner failed.

Mr. Smith's view (page 24) on the authority of the architect to employ a quantity surveyor is not that usually accepted, and I believe legally accepted. Mr. Smith says that "it is doubtful whether the architect is, *without express authority*, the agent of the owner to employ a surveyor to take out the quantities on terms that the owner is to pay him if the builder does not." The general view is, that where a building owner instructs his architect to go to competition for tenders, the architect is justified in employing a quantity surveyor, because quantities are necessary for obtaining tenders in competition. There can

be no doubt, however, that it is far safer and better, not only to obtain the building owner's sanction to the employment of the surveyor, but also to the remuneration which he is to receive.

Mr. Smith makes a statement on page 27 which builders may be glad to take advantage of. He says, speaking of making alterations after the contract is signed: "Indeed, the architect could not alter the general scheme without the builder's consent, for to do so would involve a new contract, written or verbal." This is news to me, and I can scarcely imagine an architect appealing to a builder to give his consent to an alteration of the general scheme of a building the contract for which contained the usual clauses dealing with variations on the contract.

The chapters on "Questions that may arise in Building" are very interesting, and those on "Arbitrations," which include hints on the taking of evidence, will be found to be exceedingly useful.

There are two important matters dealt with by Mr. Smith which must have cropped up in the practice of most architects, and which it is of considerable moment should be well impressed on the architect's mind. It is usual to insert in building contracts a proviso that no extra will be paid for unless it is the subject of an order in writing from the architect, and we know of many cases where the building owner has taken advantage of this to defraud the builder of payment for work done. Mr. Smith, however, provides a loophole of escape for the honest architect in the following sentence (p. 32): "But if at the end of the contract"—or, I presume, earlier—"the architect gives a certificate allowing the work as an extra, it is, in the absence of fraud, conclusive, and the owner cannot resist payment on the ground that there was no order."

The second point has reference to the matters which can be submitted to the referee under an arbitration clause—such, for instance, as that in our old Institute Conditions. Mr. Smith says (p. 34), "For nothing can be submitted to the referee except the special matters mentioned in the Arbitration clause, all of which have to do with the works, or any other matter or thing arising under or out of the contract." And a "question of fraud" (Mr. Smith is speaking of fraud or collusion on the part of the architect) "is not such a matter, but involves an importation of that which vitiates every special contract, and leaves a man to recover what he has earned independently of the contract." This reminder is useful in cases where it is endeavoured to enlarge the words "or any other matter or thing, &c.," to embrace any and everything which may arise in connection with the building contract.

There are many other little matters upon which I should like to have commented, but I have, perhaps, said sufficient to convey the idea



which prevails with me, that Mr. Smith's little book should be present on the shelves of every architect's bookcase.

The second book under notice is the third edition of a well-known book, containing all that made it famous, and two or three additional cases. If I felt any desire to demur to Mr. Fletcher's manner of illustrating light and air cases it would be that he has a tendency to complicate his subject by too many angles—*vide* his diagrams on plates 18, 20, and 21. But why should I halt, even to that extent, when in reference to this third edition the Professor himself says—"Surely, with these added advantages, this must still continue to be the accepted text-book on the subject"? *Verbum sap.*

WM. WOODWARD.

(97)

### STEREOTOMY.

*Practical Masonry: A Guide to the Art of Stone Cutting, comprising the Construction, Setting-out, and Working of Stairs, Circular Work, Arches, Niches, Domes, Pendentives, Vaults, Tracery Windows, &c. For the use of Students, Masons, and Other Workmen. By William R. Purchase, Building Inspector to the Town of Here. With 50 Lithographic Plates, comprising about 400 diagrams. Large 8o. Lond. 1896. Price 7s. 6d. Crosby Lockwood & Son, 7, Stationers' Hall Court, Ludgate Hill, E.C.]*

This work, although only "intended to initiate young beginners in the craft into the rules and principles of good masonry," will undoubtedly be found useful to all interested in this important subject, whether theoretically or practically. Most of the examples given are from actual work carried out, the diagrams being carefully drawn, although there may be, in a few instances, some diversity of opinion as to whether the best methods have been adopted in execution. It is certainly a drawback that the geometrical side of some of the problems undertaken is not given more fully; tangents and tangent planes to the curves are not dealt with—these being most useful and frequently essential in accurately obtaining the contour of developments. Again, the properties and generation of the twisted bed joints and other surfaces employed are not explained. Much additional value would have been gained by a more complete elucidation of this branch of the subject, thereby enabling the student, not only to grasp more thoroughly the principles governing developable and other surfaces (frequently indispensable in ascertaining the intersection of one surface by another), but also to apply them in practice to any examples placed before him. The annular vault is touched upon; but the short paragraph given to this problem, describing only the method of finding the plan and development of the groins, is quite insufficient for its setting out and execution.

The book as a whole, however, is a practical treatise on the subject, the author himself having

commenced as an operative mason, and afterwards acted as foreman mason on many large and important buildings prior to the attainment of his present position. It should be found of general utility to architectural students and others, as well as to those to whom it is specially addressed.

HERBERT S. WOOD.

### NOTES, QUERIES, AND REPLIES.

#### The Temple of Diana at Ephesus [p. 41.]

From EDWARD FALKENER *Hon. F.*—

I have read with interest the JOURNAL of the 21st ult. containing the able, learned, and highly interesting account of Dr. Murray's discoveries in studying the remains of the celebrated Temple of Diana which are now deposited in the British Museum. I say discoveries, for discoveries are not confined to the excavating and unearthing of ancient monuments, but include the careful investigation and turning over of the marbles themselves, however ruined; the critical examination of ancient authors relating to the subject; the knowledge and recollection of all the myths and legends of the mythological portion of Lempriere's Dictionary; and an acquaintance with all the architects, painters, and sculptors whose names are mentioned in Sillig's *Dictionary of Ancient Artists*. All this Dr. Murray appears to have at his fingers' ends, and he has brought it to bear upon the subject; and he has thus helped most materially to solve and remove some of the difficulties connected with the restoration of this wonder of the world.

I have never had an opportunity of carefully studying the interesting remains of the temple: my remarks, therefore, must be very cursory. One naturally feels very loth to lose the name of Scopas as connected with this temple. It was apparently introduced by some transcriber who could not make out the meaning of "ex iis xxxvi calatæ una scapo," and so endeavoured to make sense of it by changing it to *una a Scopa*, and this solution was generally accepted; but Dr. Murray, seeing that the word in the MS. was *scapo* and not "*scopa*," thought there must be some mistake in the word "*una*," and so with great acumen hit upon the word *imo*, which could not have been discovered before portions of the sculptured columns had been brought to light. The passage, therefore, reads—"Of the total number of columns, there were thirty-six sculptured on the lower part of the shaft." This not only makes sense, but it agrees absolutely with the remains.

An ornamental metal railing enclosing the colonnades of the peristyle is another feature discovered by Dr. Murray.

The absence of the beautiful Ionic base strikes us at first as strange, as it does not conform with

the side columns; but no doubt the sculptor thought that his figures should appear to be standing on the pavement, and, as it were, dancing round the columns.

The elevation of the temple, as given in Mr. Cromar Watt's drawing No. 1, looks very unsatisfactory, for the columns appear to be standing on stilts, being too elongated; but on examining his clever perspective drawing, No. 2, we perceive that it is only the front columns which stand upon the pedestals, and that the stylobate of the end columns is continued to meet these pedestals.

I would venture to suggest that not only the end columns, but all the front columns were connected with the upper platform by a stylobate opposite to each column. Dr. Murray, it is true, believes that all four sides of the pedestals under the front columns were filled with sculpture, and he has endeavoured to determine the subjects of those sculptures, whereas my supposition would militate against the fourth or back portion of the pedestals being sculptured; for only one back portion has been discovered. Referring to this, Dr. Murray says:—"On the fourth side the sculpture has been entirely defaced." I suggest, therefore, the probability that it never had a fourth side, but that a stylobate started off behind each pedestal; and I consider that a series of such stylobates, enriched with groups of sculpture at the top, possibly of bronze, must have produced a very picturesque and playful feature of this temple, and indeed been one of the causes of its great celebrity and magnificence, whereas this effect would be lost if the ten steps described by Philo continued to the entire width of the temple, and thus insulated the pedestals, and produced the unpleasant effect complained of in the elevation, and destroyed the solidity and oneness of the design. An objection to this arises from the fact that Ward states that the lowest step had a continuity of 100 feet; but this was on the north side, and therefore the objection does not lie. I wish I were young enough to make a drawing of such a disposition of the temple.

There is another solution, however, which I would beg to offer, should the awkward effect of the front columns of the pronaos appearing to stand on stilts be objected to as inconsistent with any other example. It is that these pedestals might have stood on stylobates in front of the columns, between the flights of ten steps, and have been surmounted by statues on circular bases. This appears a more prudent solution, and less in opposition to the principles of Greek art.

As to the increased diameter of the end columns by three inches, this does not seem opposed to what we find in other temples. One-thirtieth is not a large increase.

The coins of Hadrian are very interesting, as they show the columns sculptured on the lower part of the shaft; and they are confirmed by

those of Gordian; whereas those of Antoninus Pius are comparatively rude, and show no detail. I may mention that coins are always designed in an arbitrary manner. They do not so much represent the temple, as the deity to whom it was dedicated, and with this purpose the columns are frequently massed together at the sides, in order to allow of a wide space in the middle, in which to place the deity. Thus the coin of the temple is not chiefly to represent the Temple at Ephesus, but "the great goddess Diana, whom all Asia and "the world worshippeth."

The drawings given us by Dr. Murray of portions of the ancient temple which was burnt when Alexander the Great was born are highly interesting as showing that the columns of that temple also were sculptured in the lower part, and that the name of Cræsus was engraved upon one of those which had been presented by him; and we find that in the last and celebrated temple, twenty-seven columns, or seven columns as the case may be, were presented by so many kings; and this is interesting from what we read in the Apocalypse, where our Lord promises that "him that overcometh will I make to be a pillar in the temple of my God. . . . And I will write upon him my new name." I mention in my *Ephesus and the Temple of Diana*\* that the custom of presenting columns was very common in Asia Minor, as we see in the Temples of Mylassa, Euromus, and Aphrodisias, where tablets are blocked out for the insertion of an inscription stating by whom the column was presented.

Other difficulties connected with the plan of the temple it is not necessary here to touch upon.

#### Sixteenth-century Work in India [p. 61].

From WILLIAM H. WHITE [F].—

In the learned review, by Dr. Burgess [*Hon. A.*], C.I.E., of *The Moghul Architecture of Fathpur-Sikri*, the reviewer alluded to the sinister rumour that "Government meditates the early closing of "the Surveys." Members cannot, therefore, too vigorously impress upon the Supreme Council in London that such work as that done by Mr. Edmund W. Smith, at a comparatively small outlay of public money, is a distinct help to Architecture and the arts, not alone in the great Indian Dependency, but throughout the whole British Empire. It was Dr. Burgess who, some six years ago, when he was Director-General of the Archaeological Survey of India, set Mr. Smith to measure and draw the beautiful sixteenth-century work at Fathpur-Sikri, urging him to do it exhaustively; and the author of the volume, in his preface, acknowledges the help he received from his former chief. The Archaeological Survey of the North-West Provinces is, from an artistic point of view, the most important of all, for no

\* So. Lond. 1862. In the Library.



other part of India contains so much that is really valuable to the practical architect of to-day than is there to be found. In a review, which I had the honour to write in *THE R.I.B.A. JOURNAL* [N.S. 19th June 1890], of *The Shriqi Architecture of Jaunpur*, a book of drawings and descriptions similar to that just reviewed by Dr. Burgess, I ventured to enlarge upon the value of such works. Their value to the practical architect consists in the suggestions they supply, and the examples they afford, of structural expedients and of the artistic management of details. Indeed, it cannot be too often dinned into the ears of Secretaries of State that Government is expected to continue this Survey in the North-West Provinces, and to utilise the architectural members of the Survey in controlling a reasonable conservation of historical monuments throughout the whole of India.

### THE PRESIDENT'S ADDRESS [p. 12].

#### The Institute and its Allied Societies.

In his Presidential Address to the Birmingham Architectural Association on the 15th November Mr. William Henman *F.R.I.B.A.* dealt with this subject at considerable length, and referred to Mr. Penrose's suggestion respecting the desirability of increasing the class of Fellows. Mr. Henman expressed his opinion that, if such increase is to be secured, it must be principally from the ranks of non-Metropolitan architects; and he proceeded thus:—

The published lists of the Allied Societies indicate that the senior members number 587, of whom only 149 are Fellows of the Royal Institute of British Architects and 100 Associates. Yet in the majority of cases only those who have been in practice some years can be admitted to the senior class. Consequently, as only seven years in practice is necessary to qualify for Fellowship of the Institute, the majority would, on that score, be eligible; but, in addition to senior members of local Societies, there are many able architects practising in the country who have neither joined the local Society nor the Institute.

Take our own district; there are in the Birmingham Architectural Association 11 senior members, of whom 38 have offices in Birmingham, but only 1 of that number are Fellows of the Institute; yet the names and addresses of about 120 architects are given in the directory for Birmingham alone, while our district comprises the five counties of Staffordshire, Shropshire, Warwickshire, Worcestershire, and Herefordshire.

The question arises—Cannot something be done to bring some at least of this large number of practising architects within the ranks of the Institute? I have read through its charter and by-laws, and find that, according to clause 76, "Branches of the Royal Institute may be established according to regulations to be made from time to time by the Council," yet throughout the *KALENDAR* there is no other reference to any "branch."

The suggestion, therefore, which I have to make and commend to the favourable consideration of the Institute, yourselves and all the Allied Societies, has reference to the formation of such "branches" of the Royal Institute of British Architects in the larger cities and towns throughout the country, to take the place of the existing Allied Societies, with a view not only of strengthening the Institute itself, but, in addition, to give greater vitality, influence, and scope for usefulness to the local architectural

Societies by binding all together in one corporate body. Although I am not prepared with a cut-and-dried scheme for bringing about such an imperial federation of architects, I suggest that the Institute should, as proposed by Mr. Penrose, first obtain the necessary powers to enable architects with the required qualifications, to be admitted to the class of Fellows without having to undergo the prescribed form of election at present essential, and that the Council should then enter into negotiations with the Allied Societies with the object of transforming them into "branches" of the Institute, provided an adequate number of practising architects of repute in the district are willing to become Fellows of the Royal Institute of British Architects and attach themselves to the local branch.

The branches so formed should then be all placed upon an equal footing as regards their constitution, and might consist of Fellows and Associates of the Royal Institute of British Architects, ordinary members, hon. members, and students.

Additional privileges might be granted as regards representation of the branches upon the Council of the Institute, and the more special business affecting the whole body of architects might, by arrangement, be taken, say, at only four Council meetings during the Session, one of which might with advantage be held in rotation at a branch centre. An allotment of fees, on a more liberal basis than is at present allowed to the Allied Societies, could readily be made, and as much freedom of action locally as is now enjoyed might still be granted. To encourage the attendance of local representatives at Council Meetings of the Institute, a reasonable allowance for travelling expenses might be made to them. . . .

Having shown that in our Association there are but comparatively few members of the Royal Institute, it may be supposed that in dealing with this subject here it is somewhat out of place and does not concern you. I trust, however, you may not go away with that idea; for many of you are earnestly studying to pass the Examinations in the hope of eventually entering the ranks of the Institute, and I doubt not you will appreciate that honour the more highly if you realise that it is a body of men truly representative of the architectural profession throughout the country, so that, should you ultimately determine to settle down in the provinces, you may rest assured that your interests will by it be safeguarded; and that you may, in connection with your local "branch," render active service in its ranks. For my part, when a Society claims to be representative of a class, I have no belief in its being too exclusive in the sense that, by its methods of election, worthy men are shut out. The state of things which has grown up in the architectural profession cannot in a day be revolutionised. Many who have expressed their ideas respecting the constitution of the Institute appear to me to reverse the order of precedence, and seem to hold the opinion that it is the Institute which is to make the architectural profession, and that its object is to exclude from its ranks all who cannot claim personal acquaintance with some of its members. In this way a number of able men hold themselves aloof—carrying out good work—which is a standing witness that, to be an architect, it is not necessary now to be a member of the Institute. Instead of which I am inclined to think the proper course would have been at first to have opened wide the gates and have admitted all who by their works could show they had made architecture a study, and had, to the extent of their opportunities, successfully practised the art. Then the Institute could have said, Representative as we are now of the architectural profession, we intend, in the interests of the public and the better appreciation of our art, to admit only those to its ranks who prove they are willing, by systematic study, properly to prepare themselves for its practice. . . .

If it is proved that, under the new by-laws, the closing

of the ranks of Fellow has been too precipitate, and I think that is clearly indicated by the figures quoted by Mr. Penrose, surely it is still possible to mark time for awhile. Then, if the Institute is to increase its numbers and extend its usefulness and influence, it must not only invite those to enter its ranks who by their works and actions have proved themselves worthy, but, in my estimation, it is absolutely necessary, before such will in any numbers accept the invitation, that the Institute should consider more closely and carry out more thoroughly the legitimate requirements of the profession beyond the mere confines of the Metropolis. By so doing it may make membership of the Institute a voluntary necessity to all who practise architecture as an art.

The Council of the Institute have under consideration the holding of a meeting of that body at Manchester in the spring of next year, and I have reason to believe that it is still doubtful what form the meeting will assume. I therefore humbly suggest that it should be a general conference of the Institute with the Allied Societies for the purpose of taking into consideration the desirability of drawing still closer the bonds of union. Diversity of views I quite expect there will be upon this subject; but now that the necessity has been shown for strengthening the Institute by increasing the number of Fellows, it seems to me a favourable opportunity for expressing opinions upon the larger subject. I feel sure that a free and open discussion thereof, even if it fail to bring about the full measure of union which I advocate, will certainly not be devoid of some useful purpose.

It is affirmed that the Councils of some of the Allied Societies have passed resolutions in support of the views to which Mr. William Henman has given utterance. There can be no doubt that the section of Mr. Penrose's Presidential Address, entitled "The Class of Fellows: an Appeal and 'a Suggestion'" [pp. 12-14], has aroused throughout the country a desire for greater and more practical union in the profession than at present exists. In fact, there is even enthusiasm. The mere intimation, made at the Annual Dinner of the Manchester Society on the 22nd November, that the Institute wished to hold a Meeting, to be followed, perhaps, by a Dinner, at Manchester, during the coming year, was caught up with alacrity by the Presidents of other Allied Societies, who urged that each Society in turn might have a visit from the Metropolitan Corporate Body.

#### The Sheffield Society.

At a meeting, held 30th November, of the Council of the Sheffield Society of Architects and Surveyors a resolution was passed to the effect that they would be willing to consider any tangible scheme for rendering the Royal Institute of British Architects more useful to the profession, more influential generally, and more representative of non-Metropolitan architects, than—though the resolution does not say so in words—it is at present.

As the matter is now occupying the attention of the Council of the Institute, it may be desirable for other Allied Societies to send in communications on the subject, if they have any to make, without delay.



### MINUTES. III.

At the Third General Meeting (Business) of the Session, held Monday, 2nd December 1895, at 8 p.m., Mr. Alex. Graham, F.S.A., *Vice-President*, in the Chair, with 22 Fellows (including 11 members of the Council) and 15 Associates, the Minutes of the Meeting held 18th November 1895 [p. 70] were taken as read and signed as correct.

A list of donations to the Library [see *Supplement*] was taken as read, and an expression of the thanks of the Institute to the several donors was ordered to be entered on the Minutes.

The following Fellow, attending for the first time since his election, having been formally admitted, signed the Register—namely, Silvanus Trevall (Truro).

The Hon. Secretary announced the results of the Preliminary Examination held in London, Liverpool, and Newcastle, on the 12th and 13th November 1895, and read the names and addresses of 96 gentlemen who had passed and been registered as Probationers [p. 89].

The following candidates for membership in the various classes were elected by show of hands, under By-law 9, namely—

#### As Fellows (5).

HARRY WILLIAM ROBERTS (Leicester).  
CHARLES THOMAS MILES (Bournemouth).  
GEORGE HUBBARD (*Qualified as Associate* 1894).  
HERBERT OSBORN CRISWELL (*Qualified as Associate* 1886).  
HERBERT HUNTLY-GORDON (*Qualified as Associate* 1888).

#### As Associates (25).

FREDERICK WILLIAM PETTER (*Qualified* 1895), Barnstaple.  
CHARLES KAY MAYOR (*Qualified* 1895), Manchester.  
CECIL ALEXANDER SHARP (*Qualified* 1895).  
HERBERT STORY (*Qualified* 1895), Birkenhead.  
WILLIAM HAWKE (*Qualified* 1894).  
EDWARD GREENOP (*Qualified* 1895).  
FRANCIS EDWARD MORRIS (*Qualified* 1895), Reading.  
PERCY LEEDS (*Probationer* 1892, *Qualified* 1895).  
GEORGE GILBERT IRVINE (*Qualified* 1894).  
HARRY HUTT (*Qualified* 1895), Reading.  
HARRY GARNHAM WATKINS (*Probationer* 1891, *Student* 1893, *Qualified* 1895), Lincoln.  
ROBERT SAXTON BESANT (*Qualified* 1895).  
ALFRED JOHN DUNN (*Qualified* 1895, *Pugin Student* 1895), Birmingham.  
JAMES ALFRED ERNEST LOFTHOUSE (*Qualified* 1895), Middlesbrough.  
GEORGE COWAN (*Qualified* 1895), Portsmouth.  
GEORGE JOHN THRIFT REAVELL (*Qualified* 1895).  
WILLIAM CHARLES WAYMOUTH (*Probationer* 1889, *Student* 1891, *Arthur Cates A.A. Scholar* 1892, *Qualified* 1895).  
CHRISTOPHER MITCHELL SHINER (*Qualified* 1895).  
FRANK BROOKHOUSE DUNKERLEY (*Probationer* 1889, *Student* 1892, *Qualified* 1894), Manchester.



STANLEY WILLIAM WORTH DELVES (*Probationer 1890, Student 1893, Qualified 1895*), Tunbridge Wells.  
 EDWARD GEORGE COLLINS (*Qualified 1895*).  
 EDWARD PENFOLD (*Qualified 1895*), Reigate.  
 ORLANDO MIDDLETON (*Probationer 1890, Student 1891, Qualified 1895*), Cheltenham.  
 ROBERT MESSENGER (*Qualified 1895*).  
 JAMES HEWITSON SHAW (*Qualified 1895*).

#### As Hon. Fellows (2).

EDWARD FALKENER (St. Clears).  
 SIR FREDERIC LEIGHTON H.A., Bart. (*Royal Gold Medalist 1894*).

#### As Hon. Corr. Members (3).

PROFESSOR VICTOR SCHROEDER (St. Petersburg).  
 HERMANN JOSEF STUBBEN (Cologne).  
 FRIEDRICH CARL HEIMANN (Cologne).

A selection of Professor Schröder's drawings, kindly lent by Mr. E. O. Sachs, was exhibited during the evening.

Mr. G. A. T. Middleton, having drawn attention to certain anomalies existing in the Papers set at the Intermediate and Final Examinations, as now conducted, a discussion ensued (see Appendix).

The proceedings having thus terminated, the Meeting separated at 9.30 p.m.

#### Appendix: Examination Papers.

MR. G. A. T. MIDDLETON [1] said that when he had given notice to the Council of his intention to speak at that meeting on the Papers set at the Intermediate and Final Examinations he had been asked to define the anomalies to which he desired to draw attention, and he had done so in the following words: "(1.) That whereas 'the majority of the Papers set are such as to lead a student to sound preparation, yet other, particularly those upon Land Surveying and Stress, and to a lesser extent those upon Materials, are conducive to verbal cramming of a most unsatisfactory description. (2.) That the Papers set upon the subject of stresses in both the Intermediate and Final Examinations cover practically the same ground, that yet in the Final Examination no higher knowledge than that set in the Intermediate.'"

They all admired the self-sacrifice of the gentlemen who devoted so large a portion of their time, without any return, to the very thankless task of conducting the Examinations held by the Institute. While he had noticed certain anomalies for some time past, he had hoped that they would be removed at the change of the Examination. But now that the new scheme was in force the same thing seemed to recur, and he found it his duty reluctantly to draw attention to it at that meeting, when no reporters were present and only members were allowed in the room. The chief objection was that certain of the papers led to cramming. It had often been said that that was the very thing the Institute, as a body, would most deprecate, and he fully agreed with it. There was nothing more objectionable than to be asked, as he had been asked again and again by students, to teach them how to answer the questions set in certain papers—not to teach them the subject, but how to answer certain questions. That was mainly the task he had set himself: to prove to the Meeting that there were papers which led to that cramming—which led men to learn by rote figures and facts and formulæ, and not to understand the subject really. He also said in his letter to the Council that he intended to criticise the papers set on those subjects in detail. He need not go further back than the papers set last March. He would first take one of those to which there was the least objection, that in the Intermediate: No. V. "The nature of ordinary building materials: their qualities and defects." Here there were twenty-four questions

set, one hour given to do them in, average two minutes and a half per question. That, he thought, was a great deal more than it was possible for a man to do, and yet there was no note to say that the candidate was to limit the number of questions—presumably he was supposed to take the whole twenty-four. Of those questions, again, there were several to which objection could be taken. One of the principal maxims relating to examination papers was that every question should be self-contained. That was not the case with Nos. 2, 9, 12, 14, and 19. No. 2 was, "Which are the best, and those to be avoided in proper work?" He did not think many people, taking that question as it stood, could answer it. It referred back, of course, to question No. 1. Then question 9 was, "What precautions are taken to keep out drift snow?" That referred to the heading "States, tiles." Question 12 was, "Why are the middle bells better for use than the upper and lower?" That referred back naturally to question 11, which related to Bath stone. Question 14 was, "State how the finished face on each is obtained, and what is understood as 'tooled face' and 'polished face.'" Now, question 13, which one would think question 14 referred to, was, "What are the defects to be looked for in Yorkshire sandstones?" Did question 14 mean that on each of the Yorkshire sandstones the candidate had to state how the finished face was obtained, or did it refer to Yorkshire sandstone and the Bath stone mentioned in question 11? Question 19 was, "Describe the faults of the above-mentioned timbers." Now question 18, to which that would naturally refer, was "What do you understand by battens, deals, planks, baulk timber?" It was curious that a candidate should be asked to describe the faults of timbers called "battens, deals, planks, and baulk timber." He supposed it referred back really to question 17, and not question 18. Now, all these things were exceedingly confusing to students. But they were comparatively small matters. Similarly, the papers upon the same subject set in the Final Examination afforded opportunity for cramming. There were ten questions there, but those questions were such as could be prepared for out of a particular book, Vol. III. of Livingston's *Building Construction*; they went no further. That book was written some eighteen or twenty years ago, and it was considerably out of date in many ways; it was in many respects inaccurate; and yet the questions dealt with that book only. They did not deal with materials in a practical way at all. That paper was in marked contrast to the paper upon the Principles of Construction which followed, which demanded an intimate acquaintance with constructional methods. That could not be answered by any man by study or cramming from any particular book. But in the Final Examination they wanted to get at the man's knowledge of materials actually, not what he had read; and a slight alteration in the papers set in the Final Examination would overcome that. Elementary knowledge taken from text-books should not be so valuable. Turning to the paper on Land Surveying, set for the Intermediate Examination, he was sorry to say it was a very bad paper, not only that set in the present year, but almost invariably. It was open to question whether land surveying in its full sense should be taken in an architects' examination—whether they could not deal with it just superficially, to enable a man to survey the plot upon which his building was to be placed, and small things of that kind. But assuming that it was reasonable to expect candidates for the Intermediate Examination to have a thorough knowledge of land surveying, it was still an unsatisfactory paper. The first question was one upon cross staff surveying, a system of surveying which he did not think was in use by any surveyor who really knew his business at all. It was in use, he knew, many years ago. Taking the offsets in the first question, one was 652—that was too long for accuracy. The other was 545, which was

also a great deal too long for accuracy. They could not possibly set up their perpendiculars to the point aimed at with any chance of being right, or even approximately right; it was an inaccurate system of surveying. Also there was no scale given in the question. The candidate was asked, "From the following notes plan and find the 'contents of a field'—there was no scale, and for a survey some definite scale should be stated. Another thing: it was not stated whether those distances were in links or in feet. He would not speak of any other units, but both links and feet were in common use; many architects worked with 100-foot chains; others worked with 100-link chains. A man might come from an office where a 100-foot chain was in constant use, and, finding the contents of the field in feet, be judged wrong; or he might come from another office where link chains were used, and again be judged wrong: according to whether the examiner had set the question in chains or in feet. But he was afraid there was something worse still in the question. The papers seemed based on a book written a great many years ago, published in Weale's Series, Baker's *Land Surveying*. He found that question absolutely figure for figure on page 19 of Baker's *Land Surveying*, in example 3 given on that page. He did not think they could have any greater inducement to cramming than having questions set exactly as they appeared in certain text-books. Surely it must lead to those text-books being bought and studied, being crammed and got up almost by rote! And it had happened before: his attention was called to it some two or three years ago by a student who discovered it in the examination. Questions 2 and 3 of Paper No. IX. were upon the computing scale, and upon the variation of the compass. Neither of those was a thing with which architects had anything to do in ordinary practice. They were quite outside the ordinary architect's needs; they would be all very well in a paper set, say, at the Surveyors' Institution. Question 5 was, "Lay down the plan and find the area from following 'notes.' Again no units were stated, and no scales stated, and there was no sketching on the side to show to what the offsets were taken. What would happen if there were two or three offsets on either side of the line he did not know. One must sketch in one's boundaries and what was happening on either side if one was to show it properly in a land survey. This was a theodolite survey, but the angles were given in single minutes; and as it had to be protracted it was almost impossible to do it with accuracy; accuracy could not be obtained, in fact, by protracting, and yet he presumed the angles were to be so plotted. In order to work out a theodolite survey with any degree of approximate accuracy one must go to trigonometry, one must solve triangles if possible—and there were no trigonometrical triangles set down in this problem to solve; or one must reduce the angles to the meridian and work by traversing; and, as he believed, very few architects understood traversing. It necessitated the use of traverse tables, and those were rather difficult to obtain—at least good traverse tables, which went down, as was intended in the question, to single minutes of arc and to single links of distance. Question 6 was, "Lay out  $6\frac{1}{4}$  acres in a rectangle the 'length and breadth of which shall be as 5 to 2.'" No scale was given, so it was to be presumed that the  $6\frac{1}{4}$  acres was to be laid out full size in the examination room. Or, to take it the other way, the candidate may take any scale he liked; under which circumstance it was only necessary to set out a rectangle 5 inches by 2 inches, which to some scale or other (it did not seem to matter what) would represent  $6\frac{1}{4}$  acres. He did not think even that way put it was a reasonable question. The last question was upon levelling, and to the last two columns there could be no objection—there was a clear statement, so that it would be possible to plot from what was given. But the examiner had omitted the usual intermediate sights. On a survey

with those distances, in all probability, there would be plenty of intermediate sights between the back and fore sights; but he had not much to say upon that. The great objection was that they would find the first seven lines of the first two columns were the same identically as those given on page 148 of Baker's *Land Surveying*; and they would find the other figures of those same two columns also on that same page, but slightly altered in sequence. After that it was somewhat of a relief to turn to another paper, the paper upon the Strength of Materials, which was to be found on page 245 of the *KALENDAR*. The first question was, "A beam 20 feet span in the clear is loaded at three 'points—at one point with 6 tons, at the second with '8 tons, and at the third with 10 tons. The first point is '5 feet from one end of the beam, the second point is '7 feet from the same end of the beam, and the third 'point is 8 feet from the other end of the beam. Calculate 'the equivalent weight at the centre of the beam.'" Now, there was no one equivalent weight which could be placed at the centre which was equivalent to three weights placed at three different spots; there was a weight at the centre which would produce the same maximum bending moment; there was a weight at the centre which would produce the same bending movement at any given spot; and there was a weight at the centre which would produce the same reaction as the supports; but it was different from either of the other two weights. There was no one weight at the centre which would produce the same shears. What presumably was required was the weight at the centre which would produce the same maximum bending moment; and, so stated, the question would be a satisfactory one, although a somewhat severe one, which would be better set, he would suggest, in the Final than in the Intermediate Examination. The next two questions stated certain formulæ, and left them to be worked out. They were arithmetical puzzles; they did not in the least decide whether the candidate had a knowledge of what had led to those formulæ, and how they had been arrived at, or any argument which could lead up to them; they simply gave those formulæ and left them as puzzles to be worked out. He thought that a schoolboy, if he looked through them carefully, would be able to work them out. Going back to 1882, when he himself sat for examination, he was then ignorant entirely of this particular subject, but the questions set were just these arithmetical puzzles, and being a fair arithmetician, he was able to solve them without any difficulty, although he knew nothing whatever of the subject. He believed that had been the case since with others. In question 4 a formula was stated for steel joists. Now why not, in flanged structures, induce candidates to equate the stress and bending moments? It was the reasonable and proper method to do, and was the method invariably adopted by engineers. Why throw them back upon formulæ that they had to learn by rote and simply puzzle out as they would a conundrum? It was that kind of thing that students came and asked to be taught how to do; and, after the examination was over, they did not care a bit: they forgot all about it. Question 5 was, "What weight would be safely carried by a detached 'brick pier 2 feet 3 inches wide by four bricks thick, 'assuming the safe weight per foot super to be 8 tons?" A schoolboy of 14 ought to be able to do that. It was a simple sum in arithmetic. Question 6 was, "Give the 'reciprocal diagram for a king-post truss." Certain letters were shown, but no scale was stated either referring to the diagram or to the loads, nor were the loads given. It was not even stated whether it was to be taken for dead load only, or for wind pressure also; it was simply left entirely to the student's imagination. It was the same with the Paper on the same subject in the Final Examination. In substance that paper was identical with the paper set in the Intermediate Examinations; it was no more severe; it covered no more ground, but was just the



same. In the first three questions formulæ were given and had to be worked out. Questions 4 and 5 were arithmetical puzzles again; the candidate simply had to find the sizes from the data given. In question 6 there was another stress diagram without scale, and without the load stated; it was an ordinary truss, with the exception that, as a rule, they found struts placed in it, but it was theoretically a correct truss. Again, he repeated, two papers upon stresses and the paper upon Land Surveying were such as to lead students to learn by rote, and to try to worry out formulæ instead of learning and knowing their subject. The Chairman of the Board of Examiners had written him a little while ago as follows: "Some day I look forward to the possibility of strengthening the questions in the Final to which you object; but, alas! the crass and lamentable ignorance of the bulk of our candidates on the subject you refer to will make it of necessity a gradual progress." It had been so gradual that there had been no progress for some thirteen years. As to the "crass and lamentable ignorance," he did not find it with students. He found that, reasonably taught, upon proper lines, architectural students could understand stresses, which was the subject the Chairman evidently referred to, quite as well as any other students; though some few, of course, were not able to grasp it. They had a paper on Physics in the Intermediate Examination, in which a student was expected to have some acquaintance with the ordinary laws of statics, and, as the subject of stresses was only a particular branch of statics, he had thus a basis upon which to build up better and further knowledge. In the last Examination, he understood, the papers set in Physics had all been upon hydraulics or upon electricity, and none upon statics; but upon other occasions there had been questions upon statics, and statics had had to be mastered. If a man could master statics he could go forward, at any rate to a moderate understanding of stresses, for a moderate paper in the Intermediate; and, again, by the time the Final Examination came round, if he had anything in him, he ought to be able to go forward still further, and obtain a thoroughly sound mastery of the subject. Some would say that a thorough mastery of statics was not necessary to an architect, that it was rather a subject for engineers; but as they had papers in the Intermediate and Final Examinations on the same subject, surely the papers in the Final should be more severe and demand a wider range of knowledge than those in the Intermediate! Either that, or omit the paper from the Final altogether, which, perhaps, was the proper course to adopt. In the paper on Land Surveying all that was necessary was to set such a paper as would demand a certain practical acquaintance with instruments, and a certain practical knowledge acquired in the field, not from the study of text-books thirty or forty years old.

Mr. JOHN SLATER [F.R.S.E.], B.A., said that although for the last year or two he had taken no practical part in the Examinations, he should like to make one or two observations with regard to Mr. Middleton's criticisms. He was quite sure that the Board of Examiners, from the Chairman downwards, would be only too pleased to receive any criticism on their papers submitted by Mr. Middleton. It was, however, the easiest possible thing to criticise a paper, but a very difficult thing to set one. It was most difficult for a person who had to set one or two papers a year to vary those questions, and have regard to the proper proportion between the difficulty of a paper in the Intermediate Examination and of one in the Final Examination. One of Mr. Middleton's great points was that some of the questions led to cramming. He defied any one to set a series of examination papers on any subject and not to give an opportunity to a clever crammer, or clever teacher of the various subjects treated in the Examinations—such as, he was quite sure, Mr. Middleton was—of finding the means of answering them. It had been found over and over

again at the Universities that, no matter what the subject, if he looked over a series of papers, a clever man would find out the sort of questions that recurred over and over again, and he would be able to give his students data and facilities for answering them. He fully concurred with what Mr. Middleton had said as to the desirability of setting questions that required practical knowledge of the various subjects. It was impossible, however, to go on setting those questions without giving a certain amount of book-work, and that book-work students could get up. He quite agreed with Mr. Middleton that it was a very undesirable thing to take certain diagrams out of text-books and set them for this examination; and, now that Mr. Middleton had drawn attention to it, he felt quite sure that the Board would look more closely upon the questions that were set on those subjects, and, if they found they were taken *ipsisimis verbis* from the various text-books, it would be most desirable indeed to have them altered. But no one could possibly appreciate the difficulty that the Board of Examiners had when questions were brought before them; and there was a great deal of routine matter to be considered in going into the questions seriatim. The fault undoubtedly was this: they had to conduct examinations, and they had to set questions on a number of different subjects, and they had people to do that who gave voluntarily an enormous amount of time, but who could not possibly give to the matter the time which a really good paper demanded, because they were unpaid. That was the great blot on the Examinations, and he looked forward to the time when they should have funds sufficient to pay the examiners a proper honorarium for the trouble they took in setting the questions. He was sure that the examiners in the subjects mentioned would be only too grateful to Mr. Middleton for having pointed out these anomalies. He agreed with him that the Final Examination ought to be more difficult than the Intermediate, and he was sure it was the desire of the Board to make it so. But again the difficulty presented itself, how to set the questions, and how to vary them, and increase the difficulty in the various stages of examination. Mr. Middleton had the experience, that very many of the examiners did not have, of preparing students for examination, and any one who prepared students for an examination could find out, more easily than any one else, the faults of a paper, and the way in which they could be rectified. Possibly if they could have teachers to set the various questions they would know how to "circumvent" the students. Perhaps the present examiners did not quite know how to "circumvent" the students; but he was certain that, whatever happened, they would not know how to "circumvent" the examiners. He repeated, however, that the Board of Examiners had only one object, namely, to make the Examinations test examinations so far as they could; and he would ask the meeting to note that Mr. Middleton's remarks only applied to about two-fifths of the Examinations. If with his experience of the candidates who came up for examination he could only criticise a small portion of the papers, he thought it good proof that, as a whole, the Examinations had not been so badly conducted as he apparently wished them to believe.

Mr. LEWIS SOLOMON [F.R.S.E.] said he did not at all agree with what Mr. Middleton had said. When he started the discussion he was in hopes he would take a much broader ground than he had done—that he would not take details so much, but the general scope of the Examination. Mr. Middleton found fault with three things so far as his (the speaker's) part in the Examinations was concerned, and he would simply take those points, leaving the other gentlemen who had been attacked to answer for their own papers. They must remember that the object of the Examinations was not the same as that of the Law Society or for the Civil Service. If a youth did not pass the Examinations of the Law Society he could not be a lawyer;

if he did not pass the Civil Service examinations he could not enter the Civil Service; but a candidate in the Institute Examinations was on a totally different ground—he could practise just the same if he were plucked twenty times. So what they had to consider was, not to look upon him entirely as a student who had learnt up certain things, but to see that he was capable of answering the questions as a man of practice. Some of the questions Mr. Middleton found fault with because they were not exactly on questions of moment, but rather, as he called them, puzzles in figures, but which he (the speaker) called questions which occurred in everyday practice in an ordinary architect's work—for instance, the strength of a beam intended to carry a certain weight: every architect had to do that in his young days, even if he did not do it in later years, but left it to his manager. In his own office he had to calculate the weights of beams and girders very often. Again, they had to consider that the candidates were not necessarily students to be plucked if they could not answer ordinary questions and problems. Many candidates were long past their youth, and it would be ridiculous to pluck a capable man of some fifty years because he could not answer questions of formulæ. So the questions that he set were very often, "Give the 'scantling of a beam that you would put up in a certain 'place.'" Such a man as he had mentioned would not bother to work out formulæ; he knew from experience what were the details; and that was what they considered—not the testing of a student, but the knowledge of a practical man.—Mr. Solomon then replied seriatim to the various criticisms of Mr. Middleton upon the questions set in the papers for which he was responsible, and proceeded: Another complaint made by Mr. Middleton was that the Intermediate and the Final Examinations followed the same ground. Lately they had been going in for stress diagrams—he would take that as an example. Two years ago not one candidate in twenty could answer a question on graphic statics or reciprocal diagrams. When the Intermediate Examination was started he found that whether they were taught in London by teachers, or whether they worked up for the Examination by themselves, not one in twenty candidates understood a bit about the subject. What was the result? He showed them how to set to work in the few moments of the Oral Examination, and the result had been this: two years ago not one in twenty could answer; a year ago two did answer, and at the last Final Examination every candidate got more than half marks, and out of the number certainly the average was 80 per cent. of marks, showing that the candidates had benefited by the Intermediate Examination, and that at the Final Examination they were able to answer the questions that they could not have attempted before. Only this morning he had a letter from one of the candidates, whom he had admonished pretty severely last time, who said, "I must beg you to excuse my 'poor expressions of thanks, as my gratitude to you is 'such as must be felt, not expressed in words.'" Now, if a candidate who had been relegated wrote like that, one must think that the Examination was doing good. From what he had written along with the letter he showed too that he was able to answer the questions that he could barely attempt during the Examination. Mr. Middleton seemed to omit all reference to the *viva voce* part of the Examinations. The papers set were not perfect, but in the *viva voce* the examiners could find out the weaknesses of the candidates. Where they just scraped through by cramming, the examiners were quickly able to find it out; and they were able to help those who from nervousness did not quite grasp the question at first sight. He thought it would have been much better if Mr. Middleton had accepted Mr. Arthur Cates's offer or his own, and had seen either Mr. Cates or himself with regard to the questions, instead of speaking as he had done at that meeting. He

himself had offered to meet him, and learn his views on the matter, and, if possible, to adopt them in setting papers for future Examinations. Mr. Middleton had thought fit not to accept the offer; probably he thought it was for the good of the Institute. That, however, he (the speaker) was disposed to doubt. If he had had the interest of the Institute at heart he would have accepted the offer made to him, and pointed out the defects he found fault with, and they might have been remedied in a future paper for the benefit of the whole body.

Mr. H. D. SEARLES-WOOD [F.] said that Mr. Middleton had questioned the paper on Materials in the Final Examination, and said that the whole of the answers could be obtained from the third volume of Rivington. He begged leave to say that he did not possess a copy of Rivington, and he did not consult it when he wrote the questions; but, inasmuch as that work dealt entirely with the subject upon which the paper was based, it was a little difficult for an examiner to go away from the book; and all the answers which came in, which were merely taken literally from the book, were marked down accordingly. In the *viva voce* part of the Examination he always endeavoured, as an examiner, to get at the practical experience of the candidate, if possible. With regard to the Physics subject in the Intermediate Examination, Mr. Middleton made a passing allusion to the fact that in the last Examination he had dwelt entirely upon hydrostatics and electricity. Physics, of course, related to a very large subject, and it was difficult to embrace the whole of physics in one paper; so that he generally tried to divide them. But Mr. Middleton would agree that they had given statical questions in previous years, and he (the speaker) hoped, if he lived, and had anything to do with the Examinations, to do so again. But there was a particular note in the book in which those papers were recorded, requesting the examiner to direct his attention rather more to the subjects of heat and electricity, and that was the reason why the statical part of the question had been departed from in a few instances. With regard to the paper on land surveying, Mr. Middleton was more severe upon that than upon any other. The only defence he (the speaker) could offer was that, as a rule, the candidates had no preparation whatever in land surveying, and that the book which was taken, Baker's book, was one which had been recognised as a standard book for a great many years. The reason he had in one or two instances taken the actual diagrams from that book was that he was anxious to have a form which was a settled form to a certain extent; because, if one gave one's own field notes, one almost always had a personal equation, and a candidate might say, "In our office 'we are not in the habit of keeping our field notes in that 'way.'" With regard to the first question, whether the figures were in links or in chains, he thought it must be obvious to anybody who looked at the paper that they were links; but in case any candidates made a mistake and answered the question in feet, they would be credited with their answer if it was right.

Mr. J. TAVENOR PERRY [A.] thought that a much more important and a much more profitable subject, which was absolutely necessary for practising architects—quantity surveying—should be made a subject of examination.

THE CHAIRMAN said that they were obliged to Mr. Middleton for having brought the matter before them. There were many points he had referred to which, no doubt, deserved the attention of the Board of Examiners. But with regard to cramming, Mr. Middleton must be aware that it was impossible to avoid it; any University examiner would confirm him in that. Speaking for himself, for the small part he had taken for many years in the Institute Examinations, he might say that the great difficulty was to avoid putting questions that could not be easily answered from such text-books as Gwilt and Fer-



gusson. The better part of the Examination Mr. Middleton had not referred to at all; that, as Mr. Solomon had pointed out, was the oral examination. The oral examination, in his (the Chairman's) opinion, was the great test. One fault, perhaps, to be found with their Examinations was that they did not give sufficient time to the *viva voce* part of the work. He had known many instances where a candidate would almost fail, from nervousness or other cause, in answering the questions on paper satisfactorily; but, when the examiners sat down to talk to him in a friendly way, and tried to get at the amount of knowledge he really possessed, it was found that he answered the questions and showed such an amount of knowledge as would, when he was writing his paper, have enabled him to answer nearly every question quite satisfactorily. That was a very important part of the Examinations, which had grown in value very much in recent years.

## PROCEEDINGS OF ALLIED SOCIETIES.

### THE MANCHESTER SOCIETY.

**Board-School Planning.** By Charles Henry Wyatt,  
Clerk of the Manchester School Board.

Read 3rd December 1895.

*Introductory.*—I must preface what I have to say with something in the nature of an apology for having had the hardihood to accept the invitation so kindly conveyed to me through your Secretary that I should read a Paper on the Planning of Board Schools. Of course, as many of you know, I am not an architect, and I do not pretend to be a master of the many technicalities which are necessary for the man who would successfully design a public elementary school. The views which I shall lay before you are based on a practical acquaintance with school life, and on any experience that I may have acquired during the time that I have had a more or less intimate acquaintance with the working of public elementary schools in this city. I do not propose to deal with the rules and requirements of the Education Department, except in so far as they may be included in what I have to say on the details of the provision of the necessary accommodation and adjuncts of schools seeking to be recognised by the Education Department as part of the elementary school provision of a district.

*Site.*—The first necessity for a school is, of course, a suitable site, and this, particularly in large towns, is sometimes a difficult matter. It has often struck me in reading the criticisms of the architect of the Education Department, particularly upon the lighting of schools, that many of these criticisms would be of extreme value if the school had to be erected, say, in the middle of an American prairie; but contending, as we frequently have to do in the case of town sites, with rights of light, high neighbouring buildings, access from streets, and a variety of circumstances over which we have no control, it does seem to me that it would be a good thing if the official architect would, in criticising plans, take into account the environment of the proposed school. Presuming, for the sake of my statement, that you have a fairly good piece of land, an acre or an acre and a quarter in extent, upon which you propose to erect a school—say for 1,000 or 1,200 children—I will treat first of the method of dealing with the site.

A plot of land of the size I have mentioned will give ample playgrounds for the children; consequently there will be no necessity to consider the matter of roof playgrounds, or any utilisation of possible basement space to extend the playground. I think it an essential matter that the main front of the building should, if possible, face the south, and I would so arrange that the school itself should stand as far as possible from the main thoroughfare giving access to the school premises. This would, of course, mean that the greater part of the playgrounds would be in front

of the school. There should, of course, be space at the back, not only for the necessary latrines and offices, but also for a reasonable distance between the main buildings and these appurtenances. At one corner of the site, preferably at the front, I would place the caretaker's house, so arranged that he could from his windows overlook the greater part of the playgrounds. The site should be fenced by a dwarf wall on which should be placed an unclimbable iron fence. The necessary division of the playgrounds into two parts, for the girls and infants and for the boys, should be by means of another unclimbable fence running down from the centre of the building to the centre of the boundary wall, there being, of course, a like division at the back for the separation of the offices. The best surface for the playground that I have seen is that known in Scotland as "Granolithic" pavement. Asphalt playgrounds are common in England, but care should be taken that the ground has been allowed to settle before the asphalt is put upon the surface, and the work should be thoroughly well carried out under a rigorous specification giving the thickness of the various ingredients which compose the asphalt. I believe that at Bolton the playgrounds are flagged, and I have it on the authority of the members of that Board that the method is satisfactory. Certainly it would be most lasting, but I must say that a Yorkshire flag is rather a hard thing for a child to fall on.

Having now placed our school on the block plan, let us consider the question of its internal arrangements. Presuming that it is an ordinary public elementary school, say for 1,200 children, and that it is in two departments—one for infants on the ground floor with accommodation for about 400 at 8 or 9 square feet per child, and a first floor with accommodation for a mixed department of 800 children, or for two separate departments for boys and girls each providing for 400—and presuming also that each floor has a central hall, we will first consider the question of a basement.

*Basement of School.*—Of course the ideal limit of the cost of erecting a public elementary school is that fixed by the Education Department for the purpose of the loan, and, unless there are exceptional circumstances, this is fixed at £10 per head. Some school boards, however, do not go to quite this limit. In Manchester £9 per head is thought to be sufficient to cover the cost of erection and equipment of an ordinary public elementary school. Having this limit of cost in view, together with the provision of extensive playgrounds, boundary walls, offices, &c., any one with the most elementary knowledge of the cost of school erection will admit that such a limit of expenditure does not provide for any extensive basement. You should, however, I think, have in the basement a kitchen for the caretaker—a room sufficient to hold at least twenty benches designed for manual instruction in woodwork—and in the case of a school in a poor locality, where through private munificence free meals are provided for necessitous children, it is almost a necessity to have a roomy apartment where these meals can be served.

*Ground Floor of School.*—On the ground floor we have the infants' school. The central hall on this floor would be lighted from the ends, and would also receive a certain amount of light from the glass partitions dividing the class-rooms from the hall. It is very essential that there should be direct access from this central hall to all the class-rooms, so as to enable the principal teacher, by the sound of a gong, to summon the whole of the children into the hall, for any united service in which they may have to take part, the school being also assembled and dismissed from the central hall. Access from corridors is very objectionable. The class-rooms themselves would line two sides of the hall. In the apportionment of accommodation which I have before given there is, of course, the difficulty that if on the ground floor you accommodate 400 infants you must arrange that some part of the 800 in the senior department shall find accommodation also on

the lower floor. There is, however, no practical difficulty in this, because a few class-rooms on one side of the ground floor may well be used for the lower standards of children forming the upper part of the school.

*Infants' School. Class-rooms. Partitions. Babies' Room. Central Hall.*—The class-rooms themselves should invariably be lighted from the left. I am a firm believer in plenty of window space for schools. I think the partitions between the various class-rooms should be movable, reach from floor to ceiling, and the three divisions made so as to roll into the space of one, and, of course, to consist wholly of wood and glass. In the centre partition there should be a large sheet of ground plate glass, blacked at back, for use as a blackboard. As a rule infants' schools are sadly deficient in blackboards. Care should be taken that these partitions should be well made, and that they are protected at the top by iron stays at each side, to prevent an accident through the falling of any part. Some years ago, I believe, an accident of this kind did take place in Scotland, and although it was, happily, unattended with serious results, one can easily see that the falling in of any part of the partition might have serious consequences. On the infants' floor there should be a good room to accommodate from 80 to 100 children specially arranged for babies. It should have a gallery and direct access not only to the central hall, but also into the playground, and the room should be in that part of the building nearest the offices for infants. Plenty of floor space should be left for games, and a possible swing. Figured glass should be inserted in the lower panes of all partitions, and at such a height as will enable the teachers to see over the top of same. In speaking of partitions I should explain that those between the central hall and the class-rooms ought, of course, to be stationary. All end rooms ought to be stepped for galleries. There is a difficulty in stepping rooms which are divided from each other entirely by wooden partitions, but wherever you have a wall it is well to have the back desks raised by means of steps or galleries.

One of the difficulties to be got over in a school planned as I have suggested is, of course, the lighting of the lower central hall, but I think it does not need very much ingenuity to get over this difficulty, seeing that the central hall is not, in an infants' school, used for reading, writing, and drawing. It is not essential, therefore, that it should be as well lighted as the class-rooms. There should be three fireplaces in each central hall, giving a warm and comfortable appearance. It would also brighten the appearance of the hall to put in the end windows some simple designs in colours which would not seriously obscure the light, and there is no doubt that the wall space at both ends of the hall may contribute very much to the pleasant appearance of the room if it is lined internally to dado height with figured tiles or glazed bricks having a suitable border in relief.

*Cloak-rooms.*—There should, of course, be ample cloak-room accommodation for the children. Iron fittings are, I think, preferable in cloak-rooms, and some arrangement ought to be made by which the cloak-rooms can be aired. A lavatory range containing three or four bowls should be provided in each cloak-room, and the floors to same formed of concrete, on account of the water being splashed over. Whilst speaking of lavatory ranges it is suggested that a sink with water tap similar to the one proposed for cookery kitchen be provided at each end of range of offices, to be used for drinking purposes and washing ink-pots.

*Flooring.*—The flooring throughout, except in corridors and cloak-rooms, ought to be of wooden blocks, and it is desirable to have in the central hall lines for children to march to, either painted on the floor or marked by sunk brass-headed nails. At one end of the central hall, if possible adjacent to one of the fireplaces, there should be a raised gallery on which may stand the head teacher's desk, with room for the piano, gong, &c. One of the end rooms on

the ground floor may be conveniently used as a cookery room, which, however, does not require any elaborate fittings, the ordinary cottage slopstone accommodation being sufficient. A gas stove is, as a rule, used for demonstration lessons in large towns.

*Staircases.*—Proceeding now to the upper floor, I would like to remark in passing that there is a very great difference in the method in which school staircases are arranged. There should be a staircase at each end of the building, each communicating with an independent exit, and having independent access to the boys' and girls' playgrounds, it being a requirement of the Education Department that out of school the sexes must be rigidly divided. The simpler the staircases are the better. They should be of ample width, and lighted as efficiently as possible. Along each side there should be a hand-rail, not too high for the children to grasp. I think that staircases should be uniformly made of stone. Mezzanine floors are not recommended, as they generally interfere with the lighting of the staircase, and the accommodation afforded is not of much utility; if formed as teachers' rooms, they are too far away from the class-rooms for the teachers to have full supervision. In some cases these floors are utilised for w.c.'s, but it does not require much consideration to see that this is almost the worst use to which they could be put, for it is a difficult matter to prevent the air currents occasionally driving up the staircases, when they are positively offensive.

*First Floor.*—On the first floor we have the central hall, running from end to end with its open roof, and of course lighted from the top. The windows at each end of the hall may be made a feature; and here again there may be some leaded lights, though care should be taken to avoid inartistic combinations. In the case of a school belonging to a Board I think something of its municipal character should appear, and I would have inserted in the windows the armorial bearings of the town. Much art may be shown in the design of such windows. Heavy stone mullions are certainly objectionable. I have seen a very happy effect obtained by light wooden divisions, designed to represent a slight column, intersecting the divisions of large end windows to central halls. The same arrangement as on the ground floor will, of course, be followed as to class-rooms. It should be borne in mind in planning class-rooms that the width depends on the nature of the school furniture you intend to put into the room. A room furnished with dual desks should be wider than one furnished with long desks; and for dual desks a class-room for 60 children, at 10 square feet per child, should have dimensions approximating 24 × 25 feet. Although 60 is a suitable number for class-room accommodation, it is well to have some rooms which will accommodate 90 to 100 children. If possible these rooms should be constructed so that they may be divided into two class-rooms for 45 or 50 each. The movable partitions dividing the class-rooms throughout on this floor are, of course, useful when it is necessary to throw several classes into one for such purposes as combined lessons in singing, examinations, &c. If the central hall is attached to a mixed school, the Education Department require that there should be one group of desks for a class in the hall, and the hall is then reckoned for 60 in the accommodation. Central halls in infants' schools, or attached to separate departments for boys and girls, are not reckoned in the accommodation.

*Teachers' Rooms.*—Each floor should be provided with a private room for the principal teacher, and also with rooms for the assistant teachers, as in large towns many of the teaching staff are from force of circumstances unable to go home to their meals. In the case of a mixed staff of men and women there should be a suitable room for each sex.

*Warming and Ventilating.*—In speaking of warming and ventilating I know I am on dangerous ground, but I must say that my own opinion is in favour of open



fireplaces, which I think have obvious advantages over other methods. In connection with the fireplaces, 9-inch by 9-inch flues are frequently constructed, on account of there being an insufficiency of space in the walls for larger flues. These are often found to be inadequate, and the cause of considerable trouble, whereas 14-inch by 9-inch flues do not give the same trouble. There should be no angle in the flues which is less obtuse than 120 degrees, and no portion of the flue should be at a less angle than 60 degrees with the line of the horizon.

Every class-room and cloak-room should be provided with a ventilating flue, and each central hall should have at least three such outlets formed into the walls, except those on the top floor, where they can be taken by means of tubes from the ceilings. The ventilation of the class-rooms might be improved by means of glazed draughtless ventilators fixed in the lower portions of the window sashes. In Manchester it is not allowable to introduce any patent apparatus without the express consent of the Sites Committee of the Board. Hot and cold water supply should be laid on each floor.

*Lighting.*—I have already said that the main light should, as far as possible, be derived from the left of the scholars; but of course its quality and general distribution are as important as its direction. The windows should be large, and carried on the one hand as near as possible to the ceiling, and on the other hand well into the corners of the rooms where the desks are placed. It is desirable that the spaces between the windows should be smaller than the windows themselves. Dormer windows and top lights may be used for increasing the light, but should be sparingly resorted to, as they increase the difficulty of adequately warming the rooms. Ordinary sash windows should be used as far as possible, and care taken that their upper portions are capable of being easily opened. In arranging gas pendants for rooms it is well to follow, as a general rule, the arrangement of the windows.

Much valuable information on the subject of gas lighting may be obtained from a paper on the subject read by Mr. John West, C.E., before the Association of Mechanical Engineers on the 30th March 1895.

*Offices.*—These should be placed away from the main building, care being taken that they cannot be overlooked by neighbouring houses, though they should be well in view of those who control the school. A door should be provided to each division. The troughs should be of stoneware seated in wood, and have automatic flushing apparatus. No back-to-back offices should be allowed. Each range should have two entrances. Good ventilation is, of course, essential. The divisions should be so designed as to prevent children climbing up them, and so getting on the top. Height of seats should have some graduation, particularly for infants, varying, say, from 12 inches to 16 inches. In the boys' ranges urinals with slate divisions should be provided. The Rules of the Education Department contain the number of seats to be supplied to different kinds of schools. Effective and lock-up accommodation should be provided for the teachers.

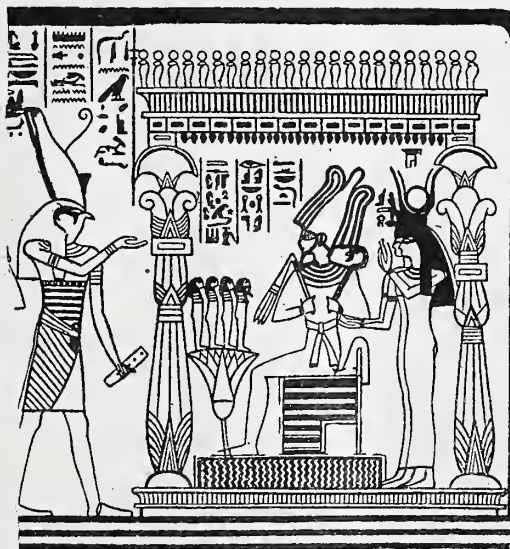
*Furniture.*—Dual desks have their advantages and disadvantages. First of all as to cost. The duals are about twice the price of continuous desks. They are not so convenient for examinations, and of course they do not meet many of the requirements which are served by reversible desks. On the other hand there is no doubt that, particularly for girls' schools, there is a great advantage in having a rest fixed to the back of the desk. As to the question whether children in dual desks or in long desks are the easiest to instruct, teachers are divided in opinion. In addition to the blackboards placed in the class-room divisions there will also be a necessity for a number of movable blackboards, which are best when made to swing on substantially mounted frames. Some arrangement should also be made in each class-room by which maps may be hung in front of the classes. It is very seldom

that we see a properly arranged museum in a school. We do frequently see cupboards with glass doors and shelves so high that their contents are almost out of view of the children. A museum, particularly for an infants' school, should not be much above dado height, and the glass should be brought down within the nearest possible distance of the floor. The wooden framing should be as light as possible. There should, of course, be a cupboard in each class-room for books, slates, &c., and a desk and seat for the class-teacher. The principal teachers should have well-made desks in which they can carefully preserve their registers and other records of the school. A good cutting out table is necessary for the teaching of needlework. I think that pitch pine is the most serviceable wood for school furniture. A piano has almost become an absolute necessity in girls' and infants' schools.

The kind of school that I have described could be easily increased in size. By having an upper storey on each side of the central hall the accommodation might thus be increased by thirty per cent., but as a rule schools of this size are not built.

*Higher Grade Schools.*—I would like to say a word or two with regard to the difference of arrangement in a building which is to be used as a higher grade school. In one which has actually been built, owing to the smallness of the site and the necessity for economy, the semi-basement is used for the chemical laboratory, the physical laboratory, manual instruction room, lecture theatre, and assembly hall or gymnasium. The first floor is for 500 boys and girls in the upper standards, and on the second floor there are rooms for Science, Art, and other advanced instruction. In such a school as this there may be instructed 500 children in the standards, with a like number in the Organised Science School. Of course a school of this kind is more expensive than an ordinary public elementary school, owing to the additional accommodation provided in laboratories, &c.; but I think the accommodation I have sketched out is ample for the purpose, and it might fairly be supplied at a cost of from £12 to £15 per head.

*Economy of Cost in School Buildings.*—It is becoming more and more a serious question, particularly with the large school boards, that the cost of erection of their schools should be reduced within the most reasonable limits. I do not mean, of course, in any sense that the schools should be imperfectly built. The materials and structure ought to be sound in every part. But undoubtedly a great deal of money may be expended on school buildings, particularly in outside ornament, which, considering the limits of any such expenditure, do not bear their money value. In Manchester there has undoubtedly been an attempt to carry out a type of school which some may think is planned on lines too severe. I grant that no attempt has been made to achieve any great architectural feature; but I think that a building suitable for the purpose, and certainly one which will not be a disgrace to any locality, may be erected in Manchester at a cost well within the limit laid down by the Board, viz. £9 per head. I would like to impress, if I may, very respectfully upon the profession the vital importance it is to the school boards that their buildings should be brought well within the estimates. It is no uncommon thing for a school board to have an annual expenditure on interest and repayment of loans of a sum nearly one-third its total income from the rates. And bearing in mind that these repayments are frequently spread over a period of fifty years, it will be seen that if the utmost care be not exercised a school board may easily pile up a great incubus of debt, which will for a long time be a serious burden upon the ratepayers. What we want are really substantially built schools, well equipped both as regards arrangements and fittings, with everything which is absolutely necessary for the instruction and healthy recreation of the pupils, and at the same time to avoid anything in the shape of unnecessary outlay and extravagant design.



GRÆCO-PHŒNICIAN ARCHITECTURE IN CYPRUS: WITH SPECIAL  
REFERENCE TO THE ORIGIN AND DEVELOPMENT OF THE  
IONIC VOLUTE. By MAX OHNEFALSCH-RICHTER, Ph.D.

Read at the General Meeting, Monday, 16th December 1895; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

I HAVE spent about thirteen years on the island of Cyprus, having been first engaged by the late Sir Charles Newton to carry out some excavations for him and his department of the British Museum, beginning as early as 1879. It is to him that I owe my career as an archæologist. After having worked about three years for Sir Charles, the Cyprus Museum was formed, and I then represented in various excavations no fewer than three parties—the Island Government, the Island Museum, and the private individuals who at that time were allowed to dig on their own account. When Sir Henry Bulwer became High Commissioner the rules were changed, and all private excavation for antiquities was forbidden. On the other hand, it was Sir Henry's principle to encourage all excavations under the authority of learned bodies, to whatever country they belonged.

As I have been invited by some of the Fellows of the Royal Institute of British Architects to deliver a lecture on my latest discoveries, I have thought it best to choose a subject which might, to a certain extent, fulfil the purposes for which the Institute was established, with such excellent results in the spread of knowledge, theoretical and practical, all over the United Kingdom; the more so because it happens that my last excavations were carried on from an architectural standpoint. I shall begin with a description of those subterranean royal tombs which have been discovered on the north side of the ancient town of Tamassos, the capital of one of the eight or ten small kingdoms or principalities into which the island was once divided. I venture to call these graves royal, in spite of the absence of inscriptions, because the masonry is so beautiful, the lining of the walls being formed of carefully dressed stones. This is especially to be remarked of the one illustrated in fig. 1 [p. 110], showing ground-plan, sections, and some details. I call the three tombs royal because I realise how seldom such stone graves have been or can be discovered.



But, again, the situation of the tombs speaks for the high rank of their owners. I discovered them in a group near the town; indeed, almost touching the northern wall of the ancient city, in the neighbourhood of an ancient sanctuary\* dedicated to the Mother of the Gods, and close to one of the principal gates and to the main road. Such a prominent spot in front of the capital and its chief entrance was naturally reserved—we know this from topographical records obtained in many an excavation—for the rulers of the country.

I shall begin with the ornamentation of the windows of tomb No. 3 [fig. 1].

Over the entrance door (D) to the first large roomy antechamber, and over the other door (E) conducting us into the second smaller chamber—the funeral chamber, properly so

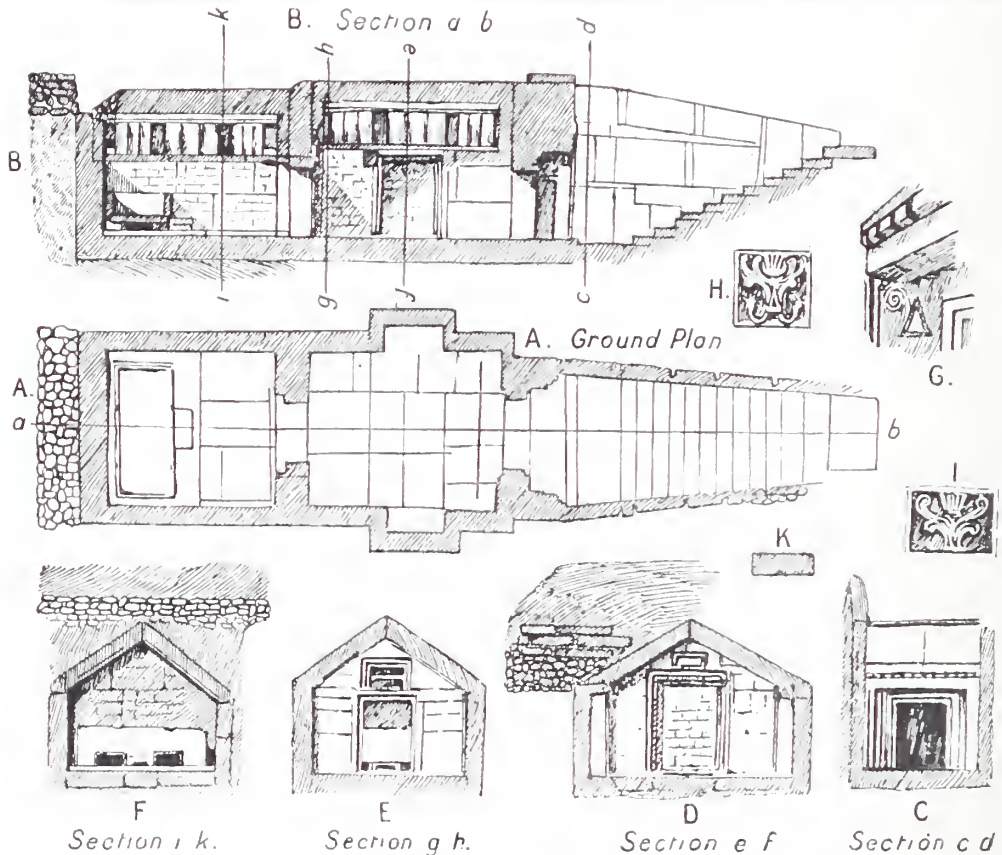


FIG. 1.—TOMB NO. 3.

called—are to be seen blind windows with richly carved and decorated sills in wood technique imitated in stone. The ornamentation of the one window is more complicated [fig. 1, II, and fig. 4] than that of the other [fig. 1, I; cf. also figs. 20 and 21]. In each case the same ornament is repeated five times in as many squares. The smaller and more simple decoration is nothing more than a simplification of the larger and more elaborate one; or we may put it the other way, and say that the more complicated ornament is formed by enlarging and developing the simple design. A glance at the illustration will convince any one that this is so. Again, the curious volutes at the entrance doors of our tomb No. 3 [fig. 1, B, G, and fig. 2], as well as the more vigorous volutes at the entrance door of tomb No. 2 [fig. 28], are simplified

\* It was my good fortune to discover this sanctuary, and with a dedicatory inscription to this divinity, in the

same excavations close by and inside the town, near the gate.—M. O.-R.

forms of their richer prototypes [figs. 20 and 21]. It will be convenient to call the simpler design [fig. 20] the *fundamental motive* (German *Grundschema*).

I now proceed to describe this fundamental design, which is best seen in the smaller window [fig. 1, 1, and fig. 20]. At the base is a triangle: out of each cathetus of the triangle grows a spiral curve of very simple description, one to the right and one to the left. Over the triangle and these two spirals, which form a kind of volute and are bent downward, lie two other similar spirals, turned the opposite way, *i.e.* upwards. In the centre, between the two upper spiral curves and over the point of the triangle, another element is introduced, consisting of three segments of curved, nearly circular, lines drawn parallel to each other, and with the opening downwards. Finally, upon this is placed the crown, in the shape of a very simple palmette, or rather peniform group of lines like plumes.

The whole ornament is repeated five times, forming the sill of the more simple windows of our royal grave. The more complicated sill at the opposite side consists of five ornaments of a type which the illustrations make it needless to describe so much in detail. I will merely say that out of the base of the triangle two ornaments spring, each of which represents the whole fundamental motive as I have described it. The principal decoration above is enlarged by introducing between the two pairs of spiral turnings—the first pair bent downwards, the second upwards—a third element, namely, a spiral with upward turnings on both sides, like an Ionicised volute, only placed the wrong way, with the snail-like windings turned up.

Now we know, as a matter of fact, that such and similar ornaments, still more complicated or still more simplified, occur so frequently over the ancient world, especially in the countries of the Mediterranean, and in all sorts of work, both of the seventh and sixth centuries B.C., that we can say without exaggeration that the student is haunted by their presence. We must call these designs, as a rule, Græco-Phœnician; but they occur also, as has been shown by research, in the earliest kinds of work, which we must consider as purely archaic Greek, and as preparing the way for that Hellenic art which, by its sentiment of beauty, is destined to rejoice the world as long as the Parthenon and the Temples of Ephesus and of Pergamon exist or are remembered.

The fundamental Græco-Phœnician model \* which we found in our royal grave of Tamasos, and which, as I hope to show, gave rise, or at least helped to give rise, to the Ionic volute, occurs very often on Cyprian antiquities of the sixth century B.C. We see it on the famous silver girdle (still of Homeric type) which I discovered in 1886 at Marion-Arsinoë, in Cyprus, and which is now one of the gems of the gold and silver collection at the British Museum. Professor Dümmler has published it, † and dated it conclusively, with my assistance, as belonging to the first half of the sixth century B.C. The work is Græco-Phœnician, showing traces of archaic Greek influence. A similar decoration is to be seen on the celebrated sarcophagus of Amathus, now in the Metropolitan Museum of Art in New York.‡ This is also Græco-Phœnician, verging on archaic Greek art, and of sixth-century work. From the same locality comes a fine silver frontal ornament, now in the Berlin Museum, which is more archaic Greek than Græco-Phœnician. § It was purchased as coming from Amathus, together with another early and pure Greek frontal, ornamented with a most beautiful Greek combination of lotus flowers, spirals, and palmettes—no doubt a development from our design and some other Græco-Phœnician types. || Again, the sacred trees on many of the silver pateræ with reliefs,

\* About its Egyptian origin see p. 121 *et seq.*

† *Jahrbuch d. Archæol. Instituts*, 1887, ii. pp. 85–94. In my *Kypros, the Bible, and Homer*, pp. 50, 55, 56, Plate XXV. 1–7, and in other parts of the book.

‡ Cesnola-Stern, Pl. XLIV.; Perrot & Chipiez, *Histoire de l'Art dans l'Antiquité*, iii. pp. 608, 609, figs. 415, 416; *Kypros, the Bible, and Homer*, Pl. CXVII. 8.

§ A. Furtwängler, *Neue Erwerbungen Jahrb. d. Deutsch. Arch. Inst.* 1891. Anzeiger, p. 126, fig. 2 A; *K. B. & H.* Pl. CXIII. 7.

|| *Ibid.* 2 B; *K. B. & H.* Pl. CXIII. 4. It is as clear as possible how the pure Greek decoration (2 B) developed out of the Græco-Phœnician (2 A) made in Cyprus, and again in metal-work.—M. O.-R.



found and made in Cyprus, and dated as belonging chiefly to the sixth century B.C., offer forms identical with or very similar to our fundamental motive. The two golden bracelets from Kurion, both in New York, may be quoted as bearing our so-called fundamental motive in its pure form. They are given by MM. Perrot and Chipiez,\* and are also in my own book.† In some of the replicas and variations of our motive we note lotus flowers or lotus buds growing out of the corners of the volutes, both of those bent downwards and of those bent upwards. We see the same detail, but simplified, in fig. 21 [p. 123], forming the smaller decoration of the window from our grave. So far Cyprus.

It would take too long to pass in review even the principal of the best known and exactly dated antiquities from other countries with this ornament on them. They all date from the seventh or sixth century B.C.; a few are even earlier. They are all Græco-Phœnician or archaic Greek, sometimes influenced more by Oriental, Phœnician, or Etrurian art. A few of these may be cited by way of example. In Etruria:—An ostrich-egg from Polledrara (*Histoire de l'Art*, iii. p. 857, fig. 625; p. 859, fig. 627; cf. *K. B. & H.* Pl. CXVI. 12 and CLXII. 11); bronze ash-basket from the grave of the warrior of Vetulonia in Etruria. Fortingham (*American Journal of Archaeology*, 1888; cf. also *Notizie degli Scavi Dei*, 1887) refers it to the beginning of the seventh century B.C., regards it as Phœnician, and suggests that it was exported from the East in ancient times, and brought to Etruria. I must regard it as Cyprian, Græco-Phœnician, and of seventh-century work (cf. my arguments, *K. B. & H.*, p. 423, and Pl. XCV. 1). In Alexandria:—Bronze piece of armour, now in the Louvre (Longpérier, *Musée Napoléon III.*, Pl. XXXI., and reproduced many times). Furtwängler considers it to be Assyrio-Egyptian work, and places it in the period of the Great Rameses; but I cannot agree with him. It must be Cyprian, and may not be much earlier than 650 B.C. (cf. *K. B. & H.*, p. 433). This curious piece of bronze relief illustrates my point admirably. The ornament on it is very similar to those on the windows of our Tamassos tomb. In Arados, Phœnicia:—A marble slab, two griffins on either side of a sacred tree, stylised much in Cyprian fashion, and so similar to the group of ornaments we are at present studying that I ascribe it to Cyprus (cf. *K. B. & H.*, p. 150), as well as a second slab‡ bearing a decoration identical with that of the Marion silver girdle in the British Museum and the Amathus sarcophagus in the Museum at New York§ (cf. *K. B. & H.*, p. 431).

But, even if I cannot convince you that objects found in Alexandria, Phœnicia, Assyria, and Etruria were made in Cyprus, it will not alter their style and date. These objects are all of seventh or sixth century B.C. workmanship, one or two being, perhaps, even older.

Last, but not least. Many authorities have agreed to my dating. It will be sufficient to refer you to two from Germany and one from Austria. The first is your Hon. Corresponding Member, Professor W. Dörpfeld, Director of the Imperial German Archæological Institute at Athens. He and I inspected the tombs together when he was in Cyprus, and he pronounced my dating correct: and stated that so long as there is a history of Greek architecture and of the Ionic Order my discovery will be quoted. The second great German authority is Professor A. Furtwängler, who has succeeded the celebrated Brunn in the Professorship of Archæology at the University of Munich. He was sent twice to Cyprus to inspect my excavations, and he, too, fully agrees with my dating of these tombs, which he

\* *Hist. de l'Art dans l'Antiquité*, iii. p. 835, figs. 600, 603.

† *K. B. & H.*, after Perrot & Chipiez, Pl. CLXII. 1 and 4.

‡ Hundreds of Græco-Phœnician monuments with the pattern of our fundamental motive and its derivation exist in the museums, and most of them are of metal. There are two reasons: first, the metal articles placed in the closed tombs are more easily and better preserved; then, also, it was so easy by the processes of workmanship

to represent volutes, spirals, conventional flowers, &c. I consider it impossible that decorations in our fundamental motive and other derivations from the Egyptian lotus flower could have been evolved in other countries quite independently of Egypt.—M. O. R.

§ Longpérier, *Musée Napoléon III.*, Pl. XVIII. 3, and reproduced in many books; *K. B. & H.* Pl. LXXXVII. 10. *Ibid.* Pl. XIV. 8; *K. B. & H.* Pl. CXIII. 8.

saw shortly after they had been discovered. The third authority is again an architect and explorer of great reputation. I refer to Dr. Niemann, Professor of Ancient Architecture at the Academy of Art in Vienna, who, together with Professor Benndorf, explored Asia Minor, and has written many valuable books. He did not see the originals, but only my photographs and drawings. He dates the tombs even fifty years earlier, being disposed to place them higher up in the seventh century B.C., and considering them older than the antiquities found in them.

To sum up. My argument is a cumulative one. The style of the tombs, their peculiarities of construction, their contents, the evidence of contemporary works from Cyprus and abroad which have already been exactly dated, the agreement of scholars—all point to one conclusion, viz. that our royal graves at Tamassos are Græco-Phœnician, and belong either to the end of the seventh century B.C. [tomb No. 1] or to the beginning of the sixth century B.C. [tombs Nos. 2 and 3]. Of course, a margin of a few decades must be allowed. When we begin however, to examine the construction more in detail, we are at once met by an apparent contradiction to the result obtained. I mean the presence of lime mortar in the tombs. Previous to my discoveries it was always supposed that lime mortar was not used before Hellenistic or Roman times. This, however, is only an apparent contradiction. We now know that in Cyprus lime mortar was used as early as the seventh and sixth centuries B.C., and perhaps even earlier. There is so much limestone everywhere in the plains that the Cypriotes must have learned the making and use of this mortar independently of other nations, and almost by accident. In fact, the existence or non-existence of lime mortar cannot be considered in Cyprus to be a criterion of date, as it is, for example, in Greece. Professor Dörpfeld also agreed to this.

In making these three royal tombs the soil was first taken away till sufficient space was emptied, and then the masonry was built in. The inner coating of the tombs and the pointed roofs of all three are made of carefully hewn stone blocks. The blocks for the roof are of colossal dimensions, and are set up one against another like the roof of a child's card-house [see p. 110, fig. 1, D, E, F]. The inner walls are all the visitor sees, the tombs having been finished and being intact. They are made of uncemented blocks laid down one on the other, and riveted together inside by large leaden bolts. The space between the masonry and the soil is filled up with broken bits and rough stones, cemented together with lime mortar. The same materials were placed over the roof. The ground-plan and sections through the tomb No. 3 [fig. 1] make all this as clear as possible.

No. 1, the oldest of the three tombs, is approached by a sloping road, or *dromos*, of about 20 metres (65 English feet) in length. This approach is not paved, but simply dug in the earth, and it slants down to a kind of small entrance court paved with flagstones. All along each side the approach is lined with a massive wall of stone blocks. The effect is very massive, and the interior resembles a church in height and proportions. Lime mortar is only used for the filling-in, not for the block masonry. This first tomb is the largest, roomiest, and deepest of the three. In this "*dromos* grave" the door is not ornamented. When I had discovered the tomb I found the door closed by a very large and massive flagstone, so that I at first thought I might find the tomb intact. This was, unfortunately, not the case. The robbers must have known the situation of the tomb, even though the approach was filled up with earth; they had made a hole through the roof. The ground-plan and sections of the three tombs, showing the exact measurements, will be published in my forthcoming book.

Tombs Nos. 2 and 3 were approached by steps formed of carefully dressed stone, and seem to be a few decades younger than tomb No. 1. Tomb No. 2 consists of a single chamber. The prince's sarcophagus, the roof of which is formed by two enormous flagstone-like blocks, stood at the inner end. Here the entrance is supported and flanked by two pilasters which rise directly from the stone floor, but end above in capitals with primitive volutes [fig. 28,



p. 125]. The pilasters, with their capitals, of tombs No. 2 and No. 3 [fig. 1, b, c, and figs. 2 and 28] do not project more than a few inches from the wall of the staircase, and are treated as a portion of the walls, which are decorated at the top with a toothed edge, surmounted by a plain frieze. Then come the filling of unhewn stones, fragments, and lime mortar, and above it the layer of earth reaching to the surface. The upper part of the entrance to tomb No. 2 was found broken into pieces. This tomb still contained the weapons, helmets, plates, and vessels of bronze and iron of which I have spoken, besides a semi-globular drinking-cup of silver and a golden nail from an iron sword, like those on the sword of Agamemnon as described by Homer (cf. *Kypros, the Bible, and Homer*, p. 445).

The illustrations of the third tomb are here published for the first time [pp. 110, 115, 117, 118], and will be repeated on a larger scale with the measurements in my forthcoming work. This grave, as we see at the first glance, is architecturally the richest. It was the poorest in contents, the spoliation having been complete. It must have been plundered several times, perhaps as late as the Byzantine period, when bronze was so much in request. Nothing was left but common pottery of the sixth century B.C. In this case also the superposed stone, an enormous flagstone, was found *in situ* closing the door. But, alas! we soon found on the north-east angle a hole just large enough to let a man's body pass through. I have shown the hole carried through the length in the section [fig. 1, b].

The architecture of this tomb is extremely interesting, because it directly imitates in stone the construction of wood, and is the richest known example of the kind. The rock tombs of Asia Minor cannot be compared with it, nor can any similar structures in any ancient country. It appears that, in Cyprus, wood architecture remained in use much longer than in other places. We know that the island was reputed for its forests even in the time of Alexander the Great, who made one of his fleets there from cypress trees. This tree (*Cupressus horizontalis*, not *sempervirens*) is indigenous to the island, and its name is borrowed from the island of Cyprus and introduced into most modern languages. The wood of the cypress tree is one of the most durable in existence, being far superior to the cedar (*Cedrus Libani*), which, by the way, is also indigenous to Cyprus, a few small forests still existing in the hills. The ancients confused the two trees, and attributed to the cedar qualities which really belong to the cypress. The devastation of forests in Cyprus which took place during the Turkish rule had destroyed most of the cypress trees. They only grew on the limestone chain along the northern coast. Since the British occupation the forests and waste land of the State are properly protected and preserved by law. In consequence of this, thousands and thousands of young cypress trees are growing on the Government land, simply sown by nature from the seed of the surviving cypress trees. Even at the present day the Cypriotes are in the habit of cutting smaller objects out of cypress wood. The wooden lock [figs. 8 and 9, p. 118] is made of cypress wood. It is true the walls of the houses are now made chiefly of sun-dried bricks,\* seldom of stone, and never of wood; but wood is used for the columns, colonnades, and roofs.

Taking this fact into consideration, and observing the architecture of tomb No. 3 at Tamassos, together with the construction of the modern villages, especially those on the eastern peninsula, called the Karpaso, it seems evident that wood architecture played a great part in the temples of divinities and the palaces of crowned heads and chiefs at a time when in other countries it had been superseded by stone masonry. The tombs, as we see, are, in fact, simply wooden habitations imitated in stone. It may have been thought desirable to make the royal graves of a material less perishable than wood, in order that the memory of the kings might be kept alive. So architects were ordered to imitate in stone what they had before their eyes in wood. This theory of explanation is supported by the fact that we do not find in

\* An ancient building with walls built of sun-dried bricks was also found on the eastern acropolis of Idalion in 1894.

Cyprus, as a rule, stone houses or temples. Even in Roman times, temples, in the Greek sense of the word, did not exist in the island, as the British excavations for the Cyprus Exploration Fund in Old Paphos and Salamis have amply shown. I shall return to this question, from another point of view, at the end of the Paper.

Let us now return to tomb No. 3 at Tamassos, and look a little more closely at the entrance porch. Two pilasters, crowned with the curious volutes or capitals, rise, as in tomb No. 2, directly from the stone floor without any kind of base. About the origin of these volutes, their oldest prototypes, and the development down to the Greek Ionic capital, I shall speak presently. I have first to explain why these pilasters and volutes do not face the visitor when he descends the steps; why they are turned in the same direction as the sides of the door, and the walls running on both sides of the staircase. The two pilasters and capitals are facing, with their fronts, to each other. I have been looking for an explanation of this peculiarity for more than a year. The solution suggested by a learned friend did not satisfy me. He said: "The pilasters and volutes may have been placed by the architect along the sides simply because there was not space enough to put them in the other direction, *i.e.* in one bearing with the façade of the tomb entrance, the architrave, and the frieze." To this I reply that there was nothing to prevent the architect from hollowing out more earth and making the tomb as large as he chose.



FIG. 2.—VOLUTE FROM TOMB NO. 3.

The imitation of wooden architecture in stone gave me the key, and I discovered it during a trip to the Karpaso peninsula, where I went for the purpose. I already knew how the Cypriotes had preserved by tradition designs of windows, doors, locks, and bolts, and of houses with the same disposition of doors and windows as are to be seen in tomb No. 3 at Tamassos. I concluded, then, that the same would be true of the pilasters and columns. It was then in the village of Rhizo-Karpaso, at the extreme north-east of the



peninsula, that I discovered the modern wooden capital, of which I give an illustration in fig. 3, from a photograph taken by myself on the spot. I afterwards found a number of examples, both wood and stone, in other villages of the Karpaso. These columns and capitals are placed in a different way from that to which we are accustomed, because they have to bear more than one, sometimes (as here) three, of the large principal beams which support the whole or a great portion of the roof of the portico, room, or house. Not having very long or strong beams at their disposal, the builders were obliged to place the broad capitals at right angles to the direction in which the beams were laid, and to use, as in the case of Rhizo-Karpaso [fig. 3], several beams. They are cross-supports, and not longitudinal, as, for instance, Koldewey found was the case with the columns of the seventh-century temple at Neandria. The modern wooden capital differs greatly from the ancient one, and yet the modern

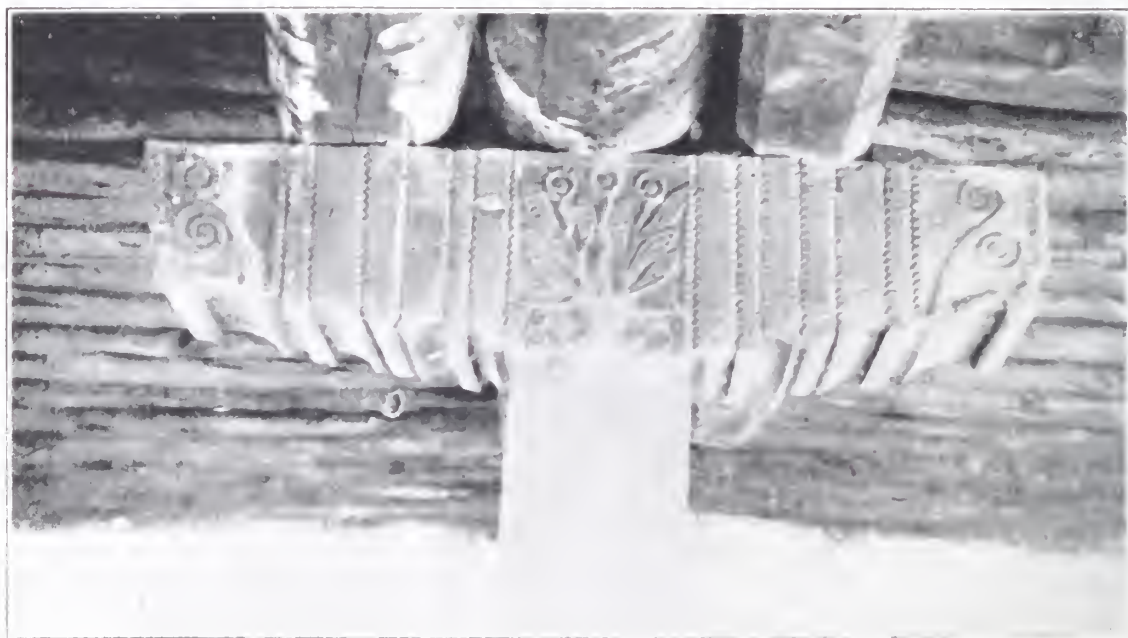


FIG. 3.—WOODEN CAPITAL FROM A MODERN VILLAGE HOUSE IN CYPRUS.

ornaments show astonishing resemblances to the ancient. At the corners are spiral curves extremely like ancient designs, but in small size. Still more curious is the ornament in the centre. A bouquet of flowers and leaves peculiarly treated grows out of a kind of capital with two spiral curves on each side. There is even a sort of triangle at the bottom, surmounted by a crown of feathers or a kind of palmette. The photograph [fig. 3] was taken from the original in the villager's house, and has not been retouched. Now I will not put the result of this enquiry as a dogmatic statement. I prefer to lay it before you in the form of a question: Have we not here sufficient evidence to make it at least probable that the ancient style of ornamentation which was in use in Cyprus about 2,500 years ago has been preserved in an uninterrupted chain of tradition down to the present day?

House entrances with a small porch of two columns or pilasters are very common in modern Cyprus, in some villages of the Mesaurea plain. Small houses, shrines, or sanctuaries, of a disposition similar to that of our royal tombs Nos. 2 and 3, and probably built partly of sun-dried bricks, partly of wood (like the modern houses), must have been very much in vogue in the seventh and sixth centuries B.C.

Fig. 10 [p. 119] represents an ancient clay model of a small sanctuary or dovecot, with the dove-goddess seated in the doorway. This votive offering came from Dali,\* the ancient Idalion, and is now in the Louvre. The capitals of the columns at the entrance are rude imitations of lotus capitals, and not of palms, as I at first thought.

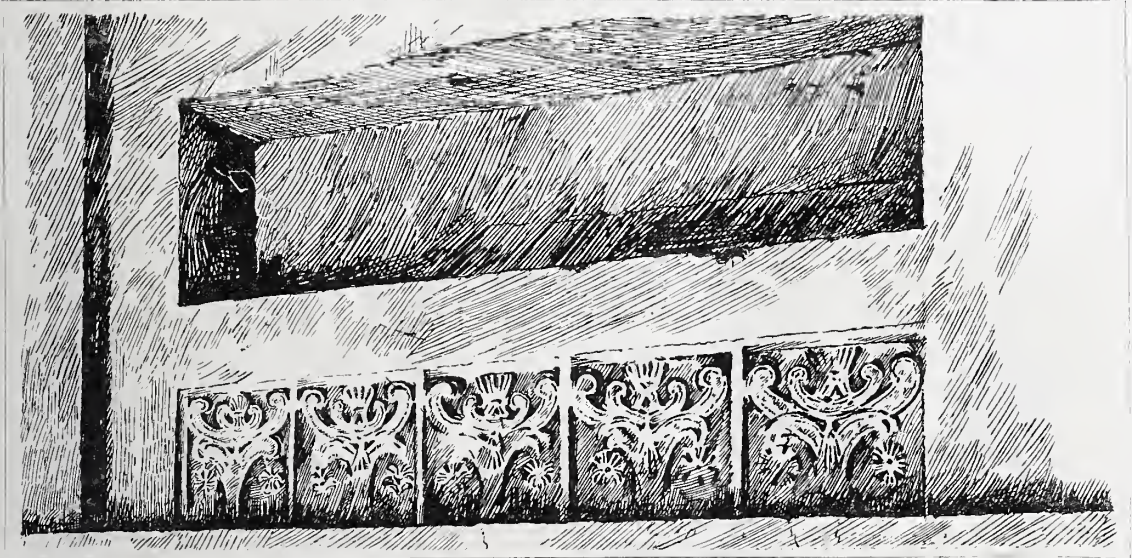


FIG. 4.—ANCIENT WINDOW FROM TOMB NO. 3.



FIG. 5.—MODERN WOODEN WINDOW IN CYPRUS.

\* *Histoire de l'Art dans l'Antiquité*, iii. p. 277, fig. 208. Cf. *K. B. & H.* Pl. CXXIV. 5.



In a seventh or sixth century (B.C.) tomb at Amathus I found a rude model of a chapel with a goddess sitting in it. The porch is supported by two pilasters, with primitive spiral curves or volutes placed as cross-supports in the same way as those at the entrance of the tombs of Tanassos Nos. 2 and 3. The small porch which leads into the first large chamber of our tomb No. 3 is much elaborated on the carved side of the roof—horizontal in this case. It is an imitation, only more stylised, of the wooden flat roofs which survive in Cyprus to the present day. Over the large beam, at right angles to it, and stretching from one pilaster to the other, a number of thin, narrow rafters are placed close together; and as they overtop



FIG. 6. ANCIENT BOLT IN STONE, FROM TOMB NO. 3.

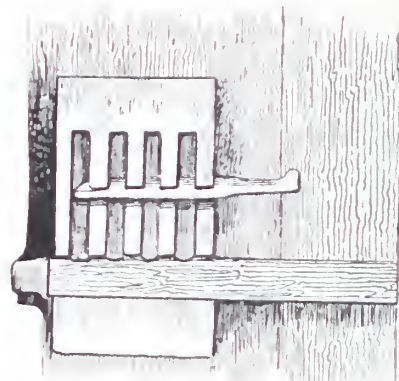


FIG. 8.—MODERN WOODEN LOCK, CYPRUS—OPEN.

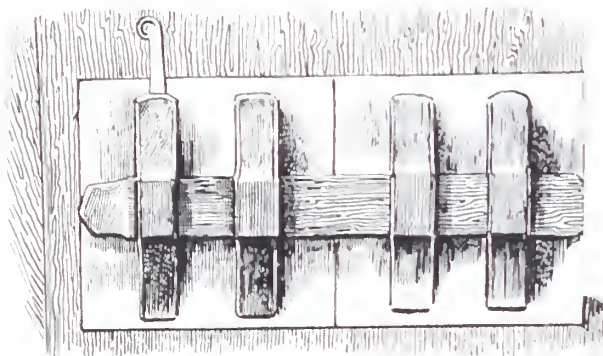


FIG. 7. MODERN WOODEN BOLT, FROM CYPRUS.

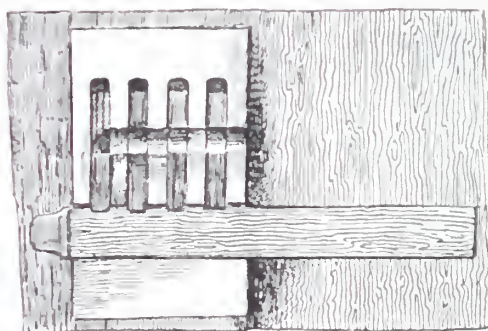


FIG. 9.—MODERN WOODEN LOCK, CYPRUS—CLOSED.

the large beam at the front they form, in a most natural manner, the toothed edge of the little façade.

The roofs of the two chambers are pointed, and each of them is formed by three pairs of large stones, the construction being the same as in the other tombs. But the appearance of these roofs from inside differs widely from the effect produced by the others. Here the builder or mason has cut out on the twelve stones (standing six and six on each side the one against the other, and three and three in each chamber) another decoration, and has imitated a more complicated roof with rafters, producing the impression that the rafters were covered at regular intervals by a handsome boarding. The sections show this curious roofing very well. There is also a section through one of the twelve stones of the roof on a larger scale [fig. 1, κ]. I have already spoken at length about the blind windows in the tomb and their decorations: windows of corresponding shape, size, and even decoration, can to-day be observed in the villages. I bought one with shutters in Lapithos.

When the shutters are closed they look like the antique imitations in the royal tomb [figs. 4 and 5; cf. also fig. 1, D and E].

Professor Dörpfeld and I discovered a fragment of a similar stone window among the ruins of the Temple of Old Paphos at Kuklia; and a second one, of ancient date, which a Turk had built in just over the entrance door of his house, as if he had known the right place. In modern houses windows introduced over the doors are very frequent.

Mahy works of Oriental art, especially of the Græco-Phœnician period, have their origin or prototype in one of the two great centres of Eastern civilisation—Egypt on the one hand, Mesopotamia with Babylon and Assyria on the other. But apparently more has been borrowed from Egypt than from any other country. So is it with our window. There is in the British Museum an ivory tablet from the palace of Asurnasirpal (884–860 B.C.),\* representing, in small size, windows very like our ancient and modern from Cyprus. The shutters are open, and a woman is looking out of the window. Her head, visible over the sill, is very large, occupying over one-third of the whole window. The tablet was found in Assyria, but it is of pure Egyptian style, and it was evidently made in Egypt and exported to Assyria in ancient times.

Besides the two real doors below the richly ornamented windows in the Tamassos tomb a massive blind door is constructed on each of the other two sides of the rectangular antechamber. They are two-leaved; but the draughtsman has forgotten to indicate the line running vertically through the middle of the doors, which indicates the leaves. These blind doors are supposed to be barred, and accordingly massive bolts are represented drawn forward and closing the doors by fixing the one leaf of the door to the other. Exactly the same bolts of wood are now commonly in use throughout the whole island. The sole difference between them and our ancient bolting is that the modern bolts are not so nicely stylised. Fig. 6 shows in larger size the ancient bolt of tomb No. 3, a stone imitation of a wooden original. Fig. 7 shows a modern wooden bolt bought at Rizo-Karpaso. Next to it [figs. 8 and 9] are placed two illustrations of the same modern wooden lock, of which I have removed the outer wooden cover plate to show the mechanism inside. When the wooden locks are in place, they look like a small square box attached to the door; the key is introduced from the side. Imitations of such wooden locks in stone are attached to all the doors of our three tombs.

In tomb No. 3 a lock is fixed to each real door, and also to the door conducting into the inner tomb chamber with the sarcophagus. The modern wooden locks are most likely identical with the ancient. Fig. 9 shows us the modern lock closed. The key has been taken out, and the six falling vertical bolts—three larger and broader, and three thinner and smaller—have dropped into the indentations of the large horizontal bolts, thus closing the door. Fig. 8 shows the lock half open, the key introduced horizontally and then raised vertically. In this way the six small bolts are pushed up, so that the big horizontal bolt can be pushed out and the door opened.

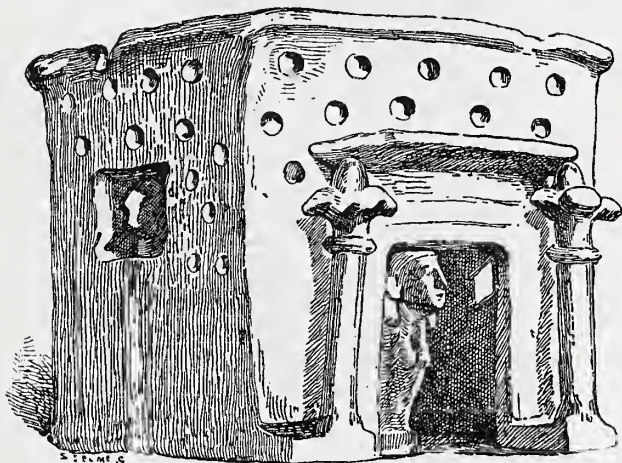


FIG. 10.—CLAY MODEL OF SANCTUARY DISCOVERED AT IDALION.

\* *Histoire de l'Art dans l'Antiquité*, ii. p. 314, fig. 129; *K. B. & H. Pl. CLIX. 7.*



The pavement of the two rooms, as of the little porch and of the steps, is formed of large flagstones. Like the blocks in the walls, they are unequal in shape and size, and each is cut to fit into a certain space.

We now proceed to the second room, where the prince was buried in a stone sarcophagus. The sarcophagus is shaped like a bed, the ancient *kline*; and before it stands a small footstool, all imitated in stone. The space between the stone masonry, built without any lime mortar, and the upper soil is here again filled up with smaller irregular stones and lime



FIGS. 11 AND 12.—HATHOR CAPITAL FROM KITION.

mortar, as in the other two tombs. Against the upper part of the roof some rows of more regular stones have been laid.

One word of explanation may be added. The curious construction of the antechamber, having four doors in the centres of the four walls of the rectangular room, may have surprised you to some extent. But also here I discovered important modern counterparts. Many of the peasants' houses in the Karpas peninsula consist of one room only, but have four doors in the four directions, all four with bolts, and two of them with locks and keys in addition. Sometimes a second room is placed behind the other, as in our royal tomb, and is used as a store or lumber room. A porch is placed on one side of the house—usually at the south—to get the greatest heat of the sun, and is called *ήλιακός* (*heliakos*, i.e. sun-hall). This porch is long or short, with more or fewer columns. As I have said already, in some villages this porch is

quite similar to the porch of our ancient royal tombs [Nos. 2 and 3]. There is a similar construction in our ancient clay model from Idalion, already referred to [fig. 10].

I now proceed to the second part of my lecture, in which I have to lay before you part of the material collected in Cyprus and other countries, which throws light on the origin and development of the Ionic capital. Among the many sources of that curious compound known as Græco-Phœnician art, two of the principal are Egyptian and Assyrio-Babylonian. How much of what is called Græco-Phœnician art is due to the Greeks and how much to the Phœnicians is a question which, in the present state of our knowledge, it would be fruitless to discuss. For we cannot define Phœnician art until we find in Phœnicia itself remains of early civilisation, *i.e.* of a civilisation dating between 1200 B.C. and about 400 B.C. Neither the discoveries made by the French Mission nor any others can with certainty be dated farther back than the fourth century B.C. My own opinion is that where we can trace definite Phœnician influence in art it is on the side of ugliness rather than beauty. From the last epigraphic and linguistic studies of the ancient Cypriote Greek syllabary and dialect, and especially from those made by Professor R. Meister in Leipzig, we learn that, contrary to the usual theory, the Greeks must have settled in the island before the Phœnicians. It will thus be no matter of surprise to find that the Græco-Phœnician art of Cyprus was one of the principal factors which gave rise to archaic Hellenic art.

The silver pateræ from Cyprus are familiar and often quoted examples of the mixture of Egyptian, Assyrian, and Greek elements in Cypriote art. A comparison of Cypriote discoveries with those made in other countries will not only convince us that this mixture existed, but it may throw light on the question how far Cyprus may be considered as the mediator and transformer of the foreign elements out of which the Greeks formed the Ionic capital.\*

Of course, to trace the growth of the Ionic capital in Cyprus, Asia Minor, the Greek colonies, and elsewhere is a difficult task, and one made more difficult by the fact that all the monuments of pure architecture are intermingled with representations of the worship of sacred posts, pillars, trees and flowers, and the use of amulets, as well as with simple elements of purely fantastic decoration.

\* There does not exist a sanctuary in Cyprus undisturbed before modern times, and where the courtyard is filled, as a rule, with statues and statuettes placed there as offerings, in which we do not find at least some works of pure archaic Greek art, made in the island from the island limestone. If this is proved conclusively, why should the Cyprian Greeks of that time not be allowed to



FIG. 13.—HATHOR CAPITAL FROM AMATHUS.

take part in the formation of other elements which became pure Greek, like the Greek Ionic capital, the Greek palmette, and the Greek anthemion? Nobody denies Egyptian influence in the oldest archaic Greek statues; why deny it for the Ionic volute, where the matter is even clearer than in the statuary?—M. O.-R.



There are two stock theories about the origin of the Ionic capital. One derives it from the palm tree, the other from the lotus flower. The prototype of the palm tree is traced to Assyria, and that of the lotus to Egypt. In my book *Kypros, the Bible, and Homer*—which, I confess, has great defects, having been worked up in too great a hurry—is much valuable material bearing on this point, consisting of illustrations and comparisons. For want of space I must refer the student to it and the other works cited below.\*

I will begin with the sacred trees. The worship of the palm tree was very common in Assyria during a certain period at least, viz. the brilliant epoch of Asurnasirpal. Tylor sees rightly in many of these† scenes the artificial fertilisation of the female palm by pollen from the male tree. An Assyrian cylinder at the museum of The Hague‡ with a similar scene shows besides two birds, one sitting on the earth, the second on a small palm tree. A similar motive appears in an Egyptian painting from the sepulchral chamber in Philæ. Two men are watering a sacred tree.§ There is a painted Cypriote vase in the Berlin Museum|| which shows how the Cypriote potter has combined these or similar Assyrian and Egyptian motives; and many other Cypriote artists represent scenes round the sacred tree. In some examples Egyptian influence is more apparent, in others Assyrian, in others, again, archaic Greek.¶

Then, as Tylor has shown in the *Proceedings* of the Society of Biblical Archaeology,\* reproducing a relief from Persepolis, Persian influence creates new variations, which are adopted by the painter of the well-known archaic Greek *François Vase*. Branches are artificially woven together, for which purpose palms were the most suited. Leaves of palms plaited by the women of modern Cyprus at Easter illustrate the holy trees represented on Assyrian, Persian, and Greek monuments, and similar decorations are reproduced even on Corinthian and Attic vases. All these sacred trees or tree decorations, palm trees, and palm-leaf plaitings have nothing directly to do with the Ionic volute and its prototypes.

But the case is different with the group of Græco-Phœnician sacred trees and tree ornaments more exclusively influenced by Egypt, for these designs are in direct connection with the Egyptian lotus column and lotus capital. Of course there exist, again, some mixtures with the first group, as the lotus-flower ornament went from Egypt to Assyria.

We will first deal, however, with a Hathor capital\*\* of stone, 1.33 metre high. It is worked on both sides, was found by chance in Kition, and is now in the Louvre [figs. 11 and 12]. The head of Hathor is supported by a kind of lotus bud, and wears a large head-dress. Along its sides run lotus-flower curls. In the centre of one side is represented a small chapel or shrine; on the other side is a rich design of a kind of sacred tree composed of lotus and two-winged sphinxes, partly similar to the decoration of the large window [fig. 1 H, and figs. 4 and 20], only more elaborate. Small lotus flowers grow out of the corners of the spirals.

Another piece [fig. 13] is a very free imitation of an Egyptian Hathor capital. On the head-dress is a male figure walking to the left and holding two winged horses in the heraldic "animal-taming" scheme. The motive is of Assyrian origin, but style and execution are archaic Greek. This capital is introduced to illustrate, not the Ionic volute, but the mingling

\* E. B. Tylor, "The Winged Figures of the Assyrian and other Ancient Monuments," an article published in the *Proceedings* of the Society of Biblical Archaeology, pp. 383-393; London, June 1890; and in the *London Academy*, 1892, p. 498. Eb. Schrader, *Ladanum and Palme, Sitzungsberichte d. königl. Akademie der Wissenschaften*, pp. 413-428; Berlin, 1891. W. H. Goodyear, *The Grammar of the Lotus*; London, 1891. Th. Clarke, "A Proto-Ionic Capital from the site of Neandria," *American Journal of Archaeology*, 1885, p. 1 *et seq.* O. Puchstein, "Das ionische Capitell," *Winkelman-Programm*:

Berlin, 1887. R. Koldewey, "Neandria," *Winkelman-Programm*; Berlin, 1891.

† *K. B. & H.* p. 92, fig. 130.

‡ *K. B. & H.* p. 93, fig. 131. § *K. B. & H.* fig. 91.

|| Sir Gardner Wilkinson, *Manners and Customs of the Ancient Egyptians*, iii. p. 349, fig. 588; London, 1878. Erman, *Aegypten*, ii. p. 368; Tübingen. *K. B. & H.* pp. 92, 93, figs. 91, 92, and 130.

¶ For further particulars, *K. B. & H.* pp. 47-95, and Pl. XXVI., CVIII. 1-3, CXII. 1-3.

\*\* *K. B. & H.* Pl. CC. 1, 2.

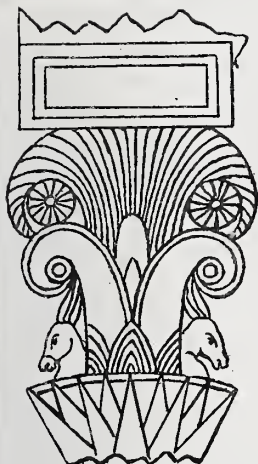


FIG. 15.—Capital from Egyptian Wall-painting.

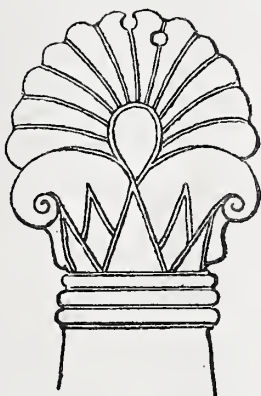


FIG. 16.—Bronze Armour plate, Græco-Phœnician, from Tamassos.

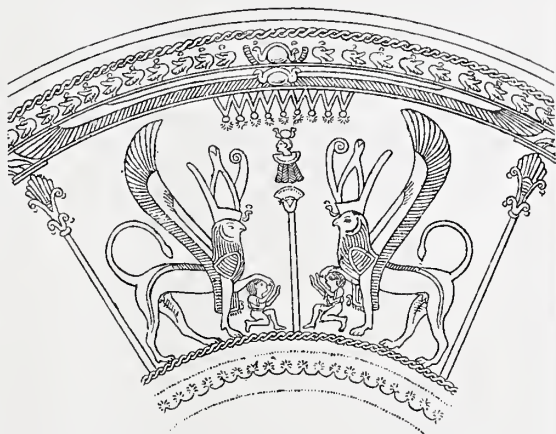


FIG. 17.—Silver Patera found at Nimroud.



FIG. 18.—Bronze Patera found at Olympia.

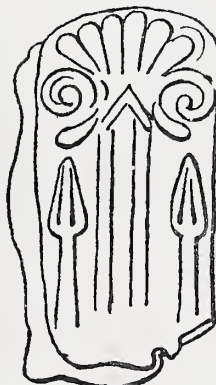


FIG. 19.—Fragment of Gold-plated Silver Girdle, Græco-Phœnician, Tamassos.



FIGS. 20 and 21.—Details of Windows, Tomb No. 3.

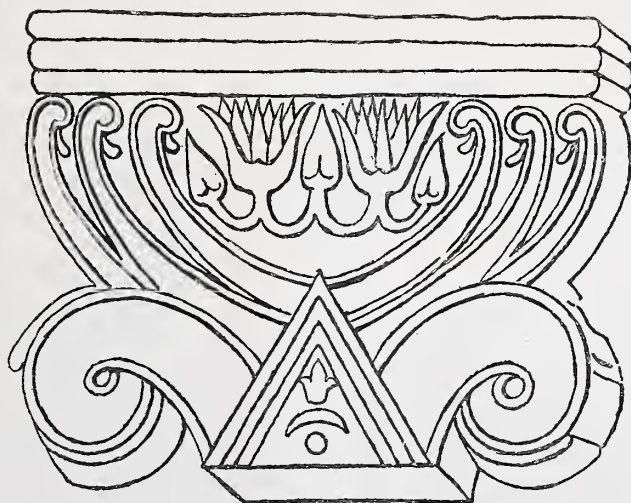


FIG. 22.—Græco-Phœnician Capital from Eastern Acropolis of Idalion.



of Egyptian, Assyrian, and archaic Greek elements in Cyprian art. Professor Dörpfeld and I found this piece in the Acropolis of Amathus, and it is now in the Berlin Museum.

We now come to the lotus column properly so called [headpiece, p. 109]. In an Egyptian wall-painting from Wilkinson's *Manners and Customs of the Ancient Egyptians* (ed. 1878), iii. p. 469, Pl. LXXI., a baldacchino is supported by two lotus columns. The capitals differ from each other. The one to the left is broader and shorter; the one to the right, narrower and higher. I will describe one only. The whole column represents a complicated lotus-stalk. There are four calyces, one over the other, ornamented round the bottom with three sepals, of which the one in the centre is triangular. Of the four sepals, the artist drew from nature the three which he could see when he placed a lotus flower before him. The flower he chose was not much developed; hence the sepals were not curved downward, but stood upright, as in our column. The sepal or spike in the centre is triangular, and this is the triangle which we even see preserved on the capitals or volutes of our royal tombs of Tamassos [figs. 2 and 28]. The petals of the calyces differ in length and shape. The lowest is excessively long, and represents a lotus bud nearly closed; the second next to it is shorter and more opened; the third and fourth calyces represent open flowers, and together form the capital of the column. Below is the curved, volute-like ornament and the bow line over the triangle, and upon this lotus design rests a lotus flower, fan-shaped and conventionally simplified. For details of the flower, called by botanists *Nymphaea lotus*, I refer you to Goodyear's *Grammar of the Lotus*. You will find in that admirable work full particulars of the way in which the stamens, pistils, ovary, spikes, &c., were used by Egyptian artists for purposes of decoration. Although we cannot all follow Mr. Goodyear in his very wide generalisations, we must acknowledge the unique value of his book as a standard work on the rôle played by the lotus flower in ancient art.

G. Colonna Ceccaldi was the first to discover, through Cypriote vases and capitals, as early as 1875, that the Ionic capital was derived from the lotus; while Mr. Goodyear was the first to prove this more in detail with regard to the Egyptian water-lily at about the same time. This was first recognised in England by Miss Amelia B. Edwards in 1888. These few words were necessary by way of acknowledgment, and we may now proceed with our chain of development.

Fig. 15 represents a portion of another column in an Egyptian wall-painting reproduced from Prisse d'Avennes. The design, which we may call a capital, rests on a large lotus-flower base, like our Hathor capital from Kition [figs. 11 and 12]. The design is very similar to the previous one, with the addition of animals' heads at the sides. But the pattern over the triangle and the three sepal leaves or spikes are more oval-shaped, and are surrounded by a palmette with rosettes.

The next illustration [fig. 16] brings us direct to the Græco-Phœnician art of Cyprus. This decoration is modelled on one of the plates of a bronze coat of mail which I found for the Royal Berlin Museum in an earth grave, with an enormous *dromos* just between the three royal stone tombs of Tamassos. On the same piece of armour is engraved a figure, in Græco-Phœnician style, showing strong Egyptian influence, and belonging to the end of the seventh or the beginning of the sixth century B.C. Here the volute with curved ends grows directly out of a similar lotus-flower design, as at the bottom of the Kition Hathor capital [figs. 11 and 12]. Here,



FIG. 29.—CLAY VOTIVE COLUMN, EASTERN ACROPOLIS, IDALION.

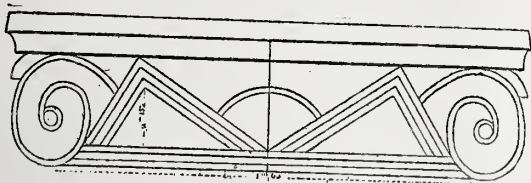


FIG. 23.—Capital from Idalion.

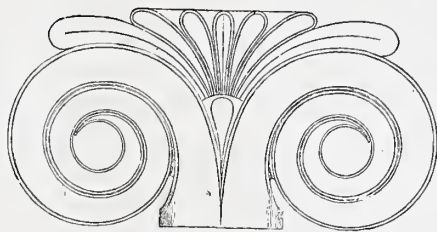


FIG. 24.—Capital from Neandria.



FIG. 25.—Relief from Boghas-Koi.



FIGS. 26 and 27.—Ivory carvings from Nimroud.

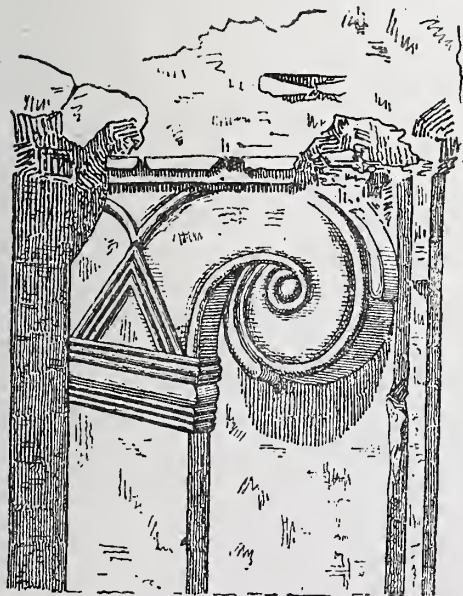


FIG. 28.—Volute from Tomb No. 2.

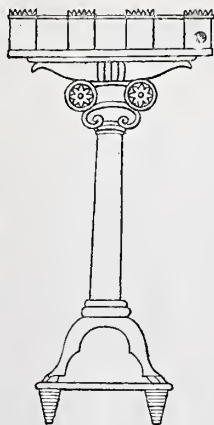


FIG. 30.—Implement from an Assyrian Relief.

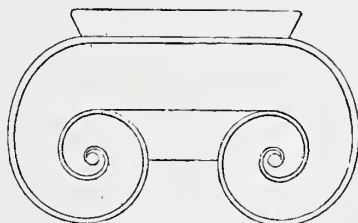


FIG. 31.—Capital from Myra.

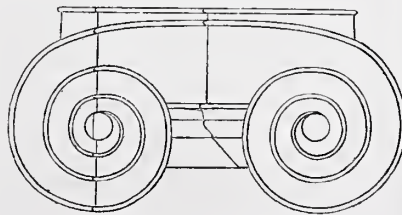


FIG. 32.—Capital from the Heraion at Olympia.



however, it is united with the calyx leaves or sepals. The triangle in the middle is more developed, and the palmette on the upper end more simplified. The line composition is harmonious, and the whole style, which differs from the Egyptian model, should rather be called Greek Ionic, showing in the meantime the derivation of the Greek palmette and anthemion. The pattern next to it, repeated eight times, appears on the four handles of the colossal stone bowl from Amathus, in Cyprus, now in the Louvre, and first published by Longpérier in his *Musée Napoléon III.*

In the last three illustrations [figs. 15–17] we observed the development of a Cyprian Græco-Phœnician ornament, strongly impregnated with Greek elements out of a pure Egyptian prototype, namely, the lotus flower. The two columns before the entrance of the little clay model of a chapel, in the shape of a dovecot, and already mentioned [fig. 10], from Dali, the ancient Idalion, in Cyprus, must be intended for lotus capitals, not for capitals of palm-tree design. It is possible that we may soon be in a position to call our Tamassos armour early archaic Greek. In the same tomb I found a beautiful silver patera, with a horse in relief, of pure archaic Greek style.

I now pass to another set of three columns, each of which is to be considered as a transformation from the Egyptian lotus column, and belonging to the Græco-Phœnician art of the sixth century B.C. [figs. 17–19].

The silver patera [fig. 17], which was found in Assyria, at Nimroud, is now, I believe, in the British Museum. There is nothing Assyrian in the design; nor are the motive, ornaments, and style purely Egyptian, although considerably influenced by Egyptian art and design. The work is Græco-Phœnician, not made in Assyria, but imported from abroad. So long as Cyprus remains the chief place where such pateræ are found, the sole place besides Egypt in which the manufacture of these pateræ can be proved, we have no grounds for attributing similar pateræ found elsewhere to any country other than Cyprus.\* We certainly cannot attribute them to Phœnicia, so long as no examples of them, and no other monuments of the same style and period, have been found in Phœnicia. The columns on this Nimroud patera have more complicated capitals. The volutes are simple, without sepals and triangle, but with small lotus buds growing out of the angles formed by the snail-shaped curves. Upon these smaller volutes are set similar but larger volutes, ending in tall palmettes, with segments of curves as centre filling. A bronze patera found at Olympia is shown in fig. 18. Here the motive of the columns and architrave is simplified. The capitals in their lower part approach more nearly to a design which might be called an Ionic or Ionicised volute; but they are surmounted by a kind of bush like a lotus flower. This bronze patera bears a Phœnician inscription. The largest number of Phœnician inscriptions known were found in Cyprus. The work of art most closely resembling this is a bronze patera discovered at Idalion in Cyprus. The style and motive are so similar that we must conclude that the patera of Olympia was made in Cyprus. The design, too, is Cyprian. It represents the nude goddess Astarte pressing her breasts.† The next illustration takes us back to Tamassos and the excavations for the Royal Berlin Museum [fig. 19]. It is important as belonging to the same class of metal work as the bronze armour and the pateræ [figs. 16–18]. It is a fragment of a gold-plated silver girdle, similarly mentioned above from Marion-Arsinoë, and now in the British Museum. This also is of sixth-century (B.C.) work, and was found in the same stratum and set of tombs to which the three royal stone tombs and the earth grave of the two warriors—buried with their horses, arms, and armour [fig. 16]—belong. The whole group is freely

\* One found in Cyprus (in the Berlin Museum) is of pure Egyptian style, and most likely of Egyptian make. Cf. *Kypros, the Bible, and Homer*, p. 441, fig. 258. It

appears that the idea of making such pateræ also originated in Egypt.—M. O.-R.

† Cf. more fully *K. B. & H.* p. 434.

copied from an Egyptian model. In the centre is a higher column crowned by a simplified lotus-flower capital, and the smaller columns have lotus-bud capitals. The same group of three lotus trees (which I formerly incorrectly supposed to be two cypress trees, one on either side of a papyrus stalk or palm tree) appears very commonly on Egyptian monuments as the attribute of the god Min, and is placed on the altar behind him. It is found in one Egyptian design, together with two divinities, originally foreign to Egyptian mythology, viz. the lion-goddess of Kadesh and the god Resef, the latter very well known in Cyprus, and identified by the Greeks of the island with Apollo, as inscriptions prove.\* The same group of three columns appears on a plate of bronze armour found in the sanctuary of the goddess Anat-Athene in the western acropolis of Idalion, and bearing a Phœnician inscription (the original is in Paris). The capital of the middle column on our fragment of the gold-plated silver girdle from Tamassos [fig. 19] is surmounted by a kind of palmette. The triangle, the remaining rudiment of the sepal leaves of a lotus flower, occupies the centre, and two rudiments of lotus buds grow out and bend downwards from the corners of the snail-shaped volutes, as in the capitals of our royal tombs Nos. 2 and 3 [figs. 2 and 28].

I proceed to the next group [figs. 20-22]. About the ornaments as they appear at the windows of our royal Tamassos tomb No. 3 [figs. 20 and 21], enough has been said above [p. 110 *et seq.*], so that we may proceed at once to another important class of large capitals or votive stelæ which develop just out of this variation of a lotus-flower capital [fig. 22]. If we compare these fine specimens of stone-work, some of which are more than a metre high, with the stone decorations from our royal tomb [figs. 20 and 21], we see at once that the differences are but slight. In the middle of the triangle are a half-moon, a sun disc, and a lotus flower; thin scales placed upon the upper and lower parts of the volutes are interrupted intentionally at the sides (*cf.* the capitals of our royal tomb, figs. 2, 23, and 28). These scales derive from the small lotus flowers which are growing out from the spirals [figs. 15-17 and 20]. Above there is a third reversed volute, and in the space between the two spirals is a lotus-flower decoration, consisting of a group of three lotus buds with two lotus flowers between them, and united by semicircular tendrils. This space is occupied in some cases by a group of long-stalked and alternating lotus buds and flowers, forming a kind of fan; in others by a sacred tree up which sphinxes are climbing. In one instance (*K. B. & H.* Plate XXVI. 2) the central tree grows out of a column with curled volutes, and consists of spirals arranged one over the other, not unlike a palmette. The sphinxes standing on lotus tendrils are worked in pure archaic Greek style. Still more purely archaic Greek is another stele,† where the tree in the centre space is really changed into a Greek palmette, and where the features and bodies of the sphinxes ‡ are purely Greek. If we must admit this, why not admit the same for the decorations and architectural elements like the capital, volute, palmette, and anthemion? All these various capitals and stelæ, some of which are continued below as a slab or pilaster, are covered at the top by a kind of primitive abacus and architrave in three or four divisions.

The capital or stele shown in fig. 22 comes from the eastern Acropolis of Idalion, where, in 1888, while making the plan of the town, I discovered a most celebrated sanctuary of Aphrodite. In this sanctuary were found no fewer than thirteen of these capitals in fairly good preservation, including those which the villagers found, by illicit digging, before they were stopped by the Government. There were also smaller fragments of as many more. Although all these capitals are worked in the same style, they differ in size, excellence of technique, and detail of

\* *K. B. & H.* pp. 74, 75, figs. 100-102, and p. 322 *et seq.*

† *Ibid.* Pl. XXVI. 1.

‡ A similar decoration with winged sphinxes standing in the sacred tree appears in the centre of our Hathor capital.—M. O.-R.



ornament. They are all tall, wide, and thin, and only worked on one side. The height varies from 70 cm. to a metre, while the thickness fluctuates between 10 cm. and 15 cm. Some few fragments are as thick as 35 cm., and seem to belong to capitals about 2 metres in height. On the upper and broader side are no traces of any kind which would lead us to suppose that the capitals had been used as structural supports or bases of statues. On the narrower lower side of each appears a rivet-hole. These holes differ in size and depth. All doubts as to the purpose of these highly ornamented capitals are set at rest by the discovery of two monuments. The one (now in the Cyprus Museum) is a stele of an elongated tabular form 1.47 metre high. On the top is a curious ornament of a more simplified design than those in fig. 22, which will be published in my forthcoming book, *Tamassos und Idalion*. There can be no doubt that this was a votive offering.

The other is a very small object, and yet not one of the least important finds in the stratum of ashes on a primitive altar for burning offerings. It is a small board-like votive pillar of clay, only 11.7 centimetres high. It ends at the top in snail volutes, and has holes by which it was hung up in the sacred place [fig. 29]. This must be a reduced copy of a votive pillar complete in itself. All these objects, the capitals, pillars, and tablets—the larger of stone, the smaller of clay—are merely different forms of votive stela, which, like statues and statuettes of gods, men, and animals, were set up in the sanctuary. This is also the opinion of Professor Dörpfeld, who has drawn my attention to the votive capitals for the support of statues found on the Acropolis of Athens. In this case the capitals themselves serve as votive gifts. These stele from the Acropolis of Idalion belong to the seventh and sixth century B.C. This is the place to mention another and older discovery made at Idalion, I think by Mr. H. Lang, in the sanctuary of Resef-Mikal-Apollon Amyklos (as the bilingual and bigraphic stone, now in the British Museum, states). It was published in Colonna Ceccaldi's *Monuments de Chypre*, after the author's death. Here we have most likely to do with a sort of capital. Instead of one, two unequal triangles are introduced between the snail-like curled volutes. Mr. Goodyear has reproduced this illustration on Pl. XV., fig. 10, of his book, and has added two drawings from two Cypriote vases, both representing a lotus flower. There can be no doubt that the mason who made Ceccaldi's capital simply tried to imitate in stone a lotus-flower design.

Let us now look at the Temple of Neandria. In Herr Koldewey's pamphlet\* on this subject are published a curious column and capital which I am not able to show here. Koldewey considers the architecture to be old Æolian and of the seventh century B.C. He distinguishes three different series of old capitals belonging to three different styles—archaic Æolian, archaic Ionian, and archaic Cypriote—and says that all three must be branches of the same old Cappadocian prototype. Fig. 25 is an example from Boghas-Köi.† According to Koldewey, all these three branches grew up independently of each other, the Æolian, with vertical volutes [fig. 24], beginning earlier and dying out earlier than the Ionian with horizontal volutes (e.g. the capital of the Artemision at Ephesus).‡ The Cypriote capital, with the crossed lines of volutes, Koldewey considers to be the third branch of the stock of Bogas-Köi, equal in value to the other two. He denies, as Puchstein does in the case of the Ionic volute, that the Æolian capital of Neandria and the Æolian volute in general derive from the Egyptian lotus volute. I think, on the contrary, that we can prove that all three types of capitals, together with the old Cappadocian stock design, derive from the Egyptian lotus capital. Of the three branches the Cypriote is the oldest, while the Æolian and Ionian are nearly contemporary.

\* *Winkelmann-Programm*. Berlin, 1891.

† Reproduced from Puchstein, *Das Ionische Capitell*, p. 60, fig. 51.

‡ Dr. Murray's "The Sculptured Columns of the Temple of Diana at Ephesus" [JOURNAL, p. 58, fig. 9].

The Cappadocian relief from Boghas-Köi is certainly pre-Hellenic; but this does not exclude its derivation from an Egyptian prototype. The whole design looks exactly like an imitation and transformation of an Egyptian baldacchino [*cf.* the headpiece, p. 109], rather than of those of Græco-Phœnician style [figs. 17 and 18]. Koldewey very ingeniously explains that the horizontal and vertical tendency of the two kinds of volutes—the Æolian and the Ionian—are both latent in the volute of Bogas-Köi, the horizontal volute in the upper line, the vertical volute in the direct junction between the volutes and the vertical line of the shaft.

One of my finds from the eastern Acropolis of Idalion [fig. 29], a small votive column of clay, just described, appears to support this theory. The top line of the volutes of Bogas-Köi is not horizontal, but considerably curved downwards, like many of the columns or volutes on Cypriote vase pictures, silver pateræ, &c. The small votive column from Idalion, in fact, has volutes, forming on the top quite a horizontal line. And then, again, if Koldewey is right in tracing an Æolian prototype in the rude volutes of Bogas-Köi, because the inner side of the volutes touches the shaft, our little Cypriote votive column would supply a better instance of this combination than do the Cappadocian columns, which are not even straight; and, on the other hand, the vertical direction is also far better shown in our Cypriote example from Idalion.

Before going further, we may look at some capitals of the Cypriote order [figs. 4, 22–24], with the crossed lines of volutes, as Koldewey calls them. In reality, neither the upper lines of the volutes, the *canalis* technically so called, nor any lines of the volutes cross each other. The triangle in the centre is sometimes just low enough to allow the lines of the two catheti and the descending lines, the *canalis* of the vertical volute (not unlike the so-called Æolian), to touch each other, *e.g.* the volute of our royal Tamassos tomb No. 2 [fig. 28], and also a small plate of carved ivory, found in the north-west palace of Nimroud, in Assyria, and now in the British Museum [fig. 27].\* But closer examination will show that the double lines of the descending *canalis* do not cross each other. The triangle is placed before the *canalis*, and makes another element in the design. The many other examples where the upper lines of the descending *canalis* do not fall in the same line with the catheti of the triangle—*e.g.* the volutes of our royal Tamassos tomb No. 3 [fig. 2] and the second ivory plate from Nimroud [fig. 26]—are other convincing proofs.

We know now the origin of this triangle in the centre of the Cypriote capitals [headpiece, p. 109, figs. 15, 16, and 19–22]. There can be no doubt it is the remnant of the central leaf of the four sepals which envelop the calyx of the lotus flower in the Egyptian lotus capital. In our armour from Tamassos [fig. 16] the three sepals are still visible. Now we have only to remove from our Cypriote volutes all the sepals, and the remainder gives us numerous variations of volutes.

Many of these are of the class which Koldewey and others would perhaps be likely to call Æolian, or works with Æolian influence. And supposing we remove the central triangles from volutes like those on the ivory pieces from Nimroud [figs. 26, 27], we get a volute like fig. 24 from Tshigor-dagh,† near Neandria, which was found by Clarke. The capitals discovered by Koldewey later on at Neandria have a similar volute at the top. Below this is a kind of a cymatium, and below, again, a large belt or corona of leaves. This lowest portion continues into the column. The whole gives the impression of being derived from the lotus column.

The same tomb in which some plates of bronze armour [fig. 16] were found contained one of the many Cypriote sixth-century (B.C.) candelabra or torch-holders, with two or three lotus-

\* For further particulars see J. T. Clarke's Essay, "A Proto-Ionic Capital from the site of Neandria," *American Journal of Archaeology*, ii. 1886, p. 10; and *K. B. & H.* p. 459. I consider these two pieces of carved ivory [figs.

26 and 27] to be works of Græco-Phœnician art, which may have been made in Cyprus.—M. O.-R.

† Puchstein, *Das Ionische Capitell*, p. 56, fig. 46.



flower designs, one above the other. Similar candelabra have been found for the British Museum at Amathus and at Kurion. In shape they resemble the Neandria capitals, with a cymatium and corona of leaves. The volute of the Neandria capitals found by Koldewey is identical with the one found by Clarke, and reproduced in fig. 24. This type of vertical volute is called Æolian. The space between the two is filled up with a wedge-shaped palmette, serving perhaps to a certain extent the purpose of an abacus.

We see, then, in Cyprus the transition from the palmette capital to the proto-Ionic spiral capital where the palmette is absent. We have nothing to do except take off the wedge-shaped palmette on the tops, and we get Cyprian volutes like those at the doors of the Tamassos tomb [figs. 2 and 28].

Amongst the discoveries made on the eastern Acropolis of Idalion in 1894-95 are stelæ with volutes, which have lost the triangles in the centre, and thus may be ranked as Æolian. Others, from the same excavation in Dali, are [fig. 29] of a more purely proto-Ionian type.

I have chosen three other illustrations from Puchstein. The one which bears the closest analogy to our column from Idalion is an Assyrian relief [fig. 30]. Here we observe a cymatium indicated between the spirals. The canalis still has the convex, like one of the volutes from Bogas-Köi, and others of Cypriote Græco-Phœnician style. The capital from Myra [fig. 31] is more similar to our capital from the Idalion clay *ex voto* [fig. 29]. In both cases there is a horizontal canalis with an abacus over it. The last capital [fig. 32] brings us into the domain of Hellenic art. It comes from the Heraion of Olympia, and is very similar to the capital found in the temple of Phigaleia, which, according to tradition, was erected by Ictinus, architect of the Parthenon. It bears a very simple cymatium and a very small abacus. The canalis between the spiræ of the volutes has also a convex form.

It would be incorrect to assert that the Ionic Greek capital in its proper form was invented in Cyprus. I agree with Puchstein in the opinion that it was created by Greek artists perhaps in Ionia, and it is even possible that the tradition which relates that the Ionic volutes and cymatium were first made for the Temple of Diana at Ephesus may be true. Since the well-known Samos capital disappeared, its twin-brother the Ephesus capital holds the first place among the early Ionic Greek capitals of the world.

Dr. Murray treated this subject, at a recent Meeting here, so much better than I can do that I will not now enlarge on it. What I have tried to show is that pre-Hellenic, *i.e.* Græco-Phœnician, architecture supplied to the Hellenes the *matériel* for the formation of the Ionic Greek volute. The original prototype was certainly the Egyptian lotus capital, but Cyprus took a prominent part in the development of the design.

During the Persian wars the communication between Greece and Cyprus was interrupted, and this caused a check in the growth of Cypriote art. Previously to this the Greeks of Cyprus appear to have taken their share in the beginnings of archaic Greek art. The transition from Græco-Phœnician to early Hellenic art occupies the period of the seventh and sixth centuries B.C., and may even have begun a few decades earlier.

My datings are also supported by an observation made by Messrs. Tubbs and Munro, who, in the course of their excavations at Salamis for the Cyprus Exploration Fund, laid bare an extremely interesting and primitive sanctuary, or temenos, on the delta of the Pidias River called Toumpa. Discoveries from that site can be seen in the British Museum, and at Oxford, Cambridge, and Cyprus. By a long chain of observations, which I must here take for granted, they succeeded in proving conclusively that the sanctuary flourished as early as the seventh century B.C., and that many of the antiquities discovered there, *e.g.* the painted clay statues and statuettes, belong to this period. So the dates arrived at by these students coincide, to all intents and purposes, with mine.

Now, I discovered on the eastern Acropolis of Idalion, together with large stone capitals or stelæ like fig. 22 and the clay votive column [fig. 29], a great number of fragments of clay statues and statuettes of exactly the same style as those discovered at Toumpa. Messrs. Tubbs and Munro referred in the *Journal of Hellenic Studies* to my previous discoveries at Frangissa, near Tamassos, and admitted that their finds of the seventh century B.C. are contemporary with those made by me at Frangissa, so far as they are identical in style and execution. Our capitals and volutes from Idalion are of the same period. At Tamassos we saw that the royal tombs could be dated back to the end of the seventh century B.C. (tomb No. 1), and to the first half of the sixth century B.C. (tombs Nos. 2 and 3).

I think I cannot finish my Paper better than by laying before you a Greek Ionic capital [fig. 33] from the ancient harbour castle of Kition. It was found there in 1879, when a



FIG. 33.—IONIC CAPITAL FROM THE ANCIENT HARBOUR CASTLE, KITION. IN THE CYPRUS MUSEUM.

portion of the Bamboula Hill was removed in order to fill up the neighbouring swamp, the *κλειστός λιμήν*, mentioned by Strabo. The canalis between the spirals of the volutes is considerably curved in a concave direction downwards, and its lower cincture follows the same curve. There is a cymatium below without decoration except the two wedge-palmettes in the lower and inner corners of the spirals, which are very much developed. These corner palmettes between the lower border of the canalis and the cymatium occur very frequently in Ionic columns. We have learned where they come from by our study of Egyptian and Græco-Phœnician monuments. They derive from the lotus buds and little lotus flowers which grow out of many of these pre-Hellenic volutes [fig. 2, fig. 12, middle, figs. 15, 16, 17, 19].

In these earthworks of 1879 on the Bamboula Hill, at Larnaca, only a very few columns were found. The Phœnician inscriptions, the *ex-voto* gifts, and the walls which were discovered, make it certain that there was formerly a sanctuary on the site. Temples, in the Greek meaning of the word, never existed in Cyprus. British excavations have proved that even in Old Paphos and in Roman times Semitic customs were kept up. It is quite the exception to find larger colonnades round the shrine and altar. Down to Roman times, worship



was carried on in *τεμένη* in the open air; but there were also, and beginning in very early times, little sanctuaries, in the shape of chapels, with a kind of porch supported by two columns, after the manner of our royal tombs of Tamassos, and resembling the little clay model of a dovecot sanctuary from Idalion [fig. 10].

#### DISCUSSION OF DR. OHNEFALSCH-RICHTER'S PAPER.

PROFESSOR AITCHISON [*F.*], A.R.A., said he had never listened to a Paper at the Institute more profoundly interesting than that of Dr. Richter. Every one who had begun his architectural studies with classic architecture must have taken the greatest interest in the Ionic Order, and would probably have formed theories of his own as to how the capital originated. He confessed that his own theories on the subject appeared to have been very far from the truth. He had always supposed that the Greeks, being a maritime people, mostly living on the seashore and in islands, must have taken their idea of the Ionic capital from the univalve shells that they saw about them. However, it seemed that the origin of the Ionic capital was not an animal, but a vegetable one. All must have noticed the volute which many of our own native plants took when they first began to shoot or to blossom. The forget-me-not and the fern were instances. Doubtless the discoveries which had lately been made in Cyprus gave a proof—at least, a proof at first sight—of the Ionic capital coming from the lotus. It would be interesting to have some examples of the spiral which the lotus flower made. Dr. Richter's examples seemed to carry irresistible conviction to one's mind. The Greeks, however, he thought, must have had the section of the canal suggested by some of the shells which they saw about them. He did not know that he could throw any light upon the subject from his own knowledge, and Dr. Richter himself had pointed out how wonderfully like one of the capitals referred to was to the celebrated internal Ionic capital of Apollo at Bassæ, which was attributed to Ictinus. As to the lime mortar that Dr. Richter spoke of as being used between the slabs at Cyprus, when he (the speaker) went to Egypt he believed that the Egyptians did not use mortar; but when he visited the Great Pyramid at Gizeh he found that every stone of it had a mortar joint. In the king's and queen's chambers every joint of those great slabs that formed the roofs was filled with mortar. Specimens of this mortar he had had analysed by a chemist, and it was found that all the mortar of the exterior was mainly composed of lime and sand, while the mortar of the interior was principally plaster. The late César Daly had visited Egypt many years before, and found that the dry external joint of the masonry was merely a device to give it a more elegant appearance, and that within the edges of the joints there was a wide channel at the top and bottom, so that the

mortar acted as a continuous dowel between the courses of stone. Daly, in one of his publications, showed the way in which it was done, which had led antiquaries into the belief that the Egyptian were like the Greek joints. The Pyramids of Gizeh were very much older than 600 B.C., and therefore it was not surprising that mortar was used at Cyprus. In conclusion, he begged leave to move a most hearty vote of thanks to Dr. Richter for his Paper.

SIR HENRY BULWER said that he came to the Meeting to listen and not to speak; but as the President had been so kind as to ask him to second the vote of thanks proposed by Professor Aitchison, he rose to do so. The question which Dr. Richter had raised was one of so technical a kind that he (the speaker) hardly liked to commit himself to words about it, and certainly he would not venture to express an opinion on it. His share in the proceedings, he thought, had been suggested rather by the fact that his acquaintance with the reader of the Paper dated back a good many years; for when he went to Cyprus in 1886, Dr. Richter was already there, and, indeed, had been there some time. It was in Cyprus, he believed, that Dr. Richter began his archaeological education, and began it in the most practical manner possible: not in the schools nor in lecture-rooms, but by conducting excavations in that classic soil under which were to be found the records of so many civilisations and so many races of men. As he worked he taught himself, learning as he went along; seeing for himself on the spot, and in this way acquiring information, impressions, ideas. Afterwards in Germany, with all the museums and with the profound scholarship and learning of that country within his reach, he was enabled to correct his impressions and to add to his knowledge. Some of the results of his Cyprus experience, and some of the impressions which he had formed there, he had been good enough to put before them that evening; and whatever might be their opinions, or the conclusions at which they might arrive, on the question he had propounded regarding the origin and development of the Ionic volute, Sir Henry was sure they were all agreed that they had had a very interesting and suggestive Paper, and would join with Professor Aitchison and himself in offering a cordial vote of thanks to Dr. Richter.

MR. FALKENER [*Hon. F.*] said he did not recollect seeing any Egyptian example of an Ionic column. He had discovered a Doric one. It

appeared to him that one style grew into another and was transplanted into another country; and he considered that some of the drawings exhibited by Dr. Richter resembled the honeysuckle ornament of a Greek *stèle* more than the volute of an Ionic capital. With regard to the imitation of woodwork in stone in the tombs referred to, such examples, as Dr. Richter doubtless well knew, were not confined to Cyprus. In the monuments of Lycia, woodwork was most perfectly represented. He would like to know whether Dr. Richter had discovered any relations, political or commercial, between these two countries. Another circumstance struck him in connection with what Professor Aitchison had said about the mortar. In the construction of the Parthenon no mortar was used; the joints were so fine as to be invisible. In the temple at Corinth, which was not so beautifully preserved as the Parthenon, this was very remarkable. There were a number of holes bored in the columns, apparently to find the copper cramp in the centre, showing that the monolithic columns had been mistaken for columns built *in frustra*.

MR. L. ALMA TADEMA [H.A.], R.A., said he had come to the meeting anxious to hear Dr. Richter's suggestions as to the origin of the Ionic capital, a subject in which he was himself much interested. He considered Cyprus the meeting-point of streams of Egyptian, Phœnician, and Greek civilisation, but not a centre to which any of these civilisations owed their origin. The Phœnician capital was a development of the lotus, and Dr. Richter had proved this completely; but that the Greek Ionic capital should be an outcome of the Phœnician capital he (the speaker) could not believe. Art does not develop spasmodically; and in the final development of a form the constructional principle that governed its origin will still be evident. Now the Phœnician capital is perpendicular; the Greek Ionic is horizontal. The Greek Ionic capitals on the votive bases found in the Acropolis at Athens are of the same period as the Phœnician capitals Dr. Richter spoke of, and are horizontal; and he (the speaker) could not alter his conviction that, the horizontal form of the capital being found in the Assyrian bas-reliefs, it was here that the origin of the Ionic capital must be looked for.

MR. R. PHENÉ SPIERS [F.], F.S.A., said there was one direction towards which he thought Dr. Richter's arguments had not turned, and one, he believed, of the very greatest importance. Dr. Richter had attempted to show them the link between the Greek Ionic capital and the lotus decorative forms which were found in Egypt. The link, however, which he had apparently neglected to note was the metal link—viz. wooden construction translated into stone through beaten metal. On a tablet found at Abou-Abba, near Bagdad, was a representation of a canopy sup-

ported by a column with volute capital, the earliest example known, and dated 900 B.C. The shaft of the column was evidently a palm-tree trunk, and it was surmised at the time when discovered, from the style of the ornament, that the feature copied was covered with metal. Some years afterwards a portion of a shaft was found at Khorsabad, about as thick as a man's waist, and on it there still remained the metal covering put on to protect the trunk. This covering consisted of a series of bronze plates about  $4\frac{1}{2}$  inches long, which covered the projecting knobs formed by the sprouting of branches afterwards cut off, as was usual in palm-tree culture. Those plates, curiously enough, took the same form they afterwards found in the egg-and-tongue ornament. He brought this forward to call Dr. Richter's attention to the fact that metal had played a very important part in the decorative forms that they found. All the capitals of Cyprus he had shown them were, to his mind, metallic forms; they were precisely those forms which, if metal was beaten over wood carving, they would be likely to find; they were not stone, but metallic forms. Unfortunately the absence of examples was due to the fact that all those features were originally made in wood, and had since perished. The description given by Herodotus of the structures in Media, at Ecbatana, showed that the palaces had peristyles of columns of wood covered over with plates of silver, and the date of those might extend back long before the Egyptian ones. The kingdom of Media existed 2,500 years at least B.C.; and therefore there was no reason why the date of that ephemeral construction of wood covered over with metal plates should not have gone a great deal farther than those decorative designs in the tombs in Egypt. From Ecbatana the forms came to Persia. Cyrus having spent a long time in the courts of Media, there seemed no doubt that it was through Persia that a great deal of the influence was exerted which they saw in the Ionic capitals. He had not seen so large a series of those before, and the only point he wished to insist upon was that it did not follow that, because a certain decorative form was found in Egypt at a certain period, some other nation might not have evolved it independently at some other period. The Greek fret was found in Egypt, in the South Sea Islands, and in Mexico, and was derived from the plaited form of the reed, and might exist in several countries, although they had no connection with one another.

MR. SIDNEY VACHER [A.] said that Dr. Richter traced the Ionic capital from Egyptian work. He should like to ask whether he thought the Phœnicians got their art through Egypt, or whether it came from Assyria, because one was always led to believe that the Phœnicians were an earlier nation than the Greeks. He had gone a good deal into the Assyrian work at the British



Museum, and it had always struck him that the earlier archaic Phœnician and the earlier Greek work must have come through Assyria.

THE PRESIDENT said that Dr. Richter had opened up a subject which was not yet wholly settled, and he had brought before them one of the elements for settling it. He had put before them in a very interesting manner additional evidence of the stone architecture which they knew so well in the final Greek work as having originated from wooden construction. It had been brought before them by the late James Fergusson, who, in his introduction to Part IV. of the *Antiquities of Ionia*, said :—

We now know perfectly well from our experience of Lycian tombs and Indian cave temples what the process was by which a wooden style became converted into lithic architecture. At first it is by copying literally every detail of the carpentry: the tenons, the mortices, even the pins and fastenings are all reproduced in stone without any difference except in material. By slow degrees, sometimes after centuries, these wooden forms are gradually abandoned and replaced by others more suitable to the new material, but seldom, if ever, without leaving such reminiscences of their origin as to enable any one accustomed to such enquiries to detect at a glance their original parentage.

With regard to the lime mortar, that created no difficulty in the way of belief. In the very early Palace at Mycenæ the steps were formed of rough stone covered with very fine lime cement; and not only so, but they had been several times mended in the same material; so that although the Greeks might not have used it for connecting their stones, yet they knew perfectly well the use of lime mortar. As for the origin of the Ionic capital, he thought what Dr. Richter had shown them was only one of the sources from which it originated. The Greeks must have seen, at Cyprus and at Tyre and Sidon, works of that kind, and have taken also some suggestions from Egypt; but at the same time there was a very distinct difference, to which Mr. Alma Tadema had already called attention, and that was the horizontal character of the real Ionic as compared with the semi-vertical character of the Cyprian examples. He believed that it originated in a different way, namely, from the very simple spiral used so frequently in the ornaments at Mycenæ and at Tiryns—which was derived from Egypt, because there were some examples of spiral work in Egyptian ornament exactly like the ceiling at Orchomenus in Greece, and which also resembled the work at Mycenæ. In these cases the spiral had equal developments at every turn. But then the Greek mind, always anxious for beauty and improvement, went much nearer to Professor Aitchison's view of the expanding spiral of the shell, and introduced another form. If they had followed the exact form of the expanding shell they would have got to the equi-angular spiral, which was not the curve used in the Ionic capital. The curve used in the Ionic capital could be rendered exactly, line for line, by a string carried round the

first-named equi-distant spiral, which spiral could itself be produced by a string carried round a cylinder. Having got so far, then, they put the string on the spiral so created, and by that means they produced their beautiful expanding spiral which formed the Ionic capital. This he had traced himself, line for line, both in diagram and in model, from both capitals of the Erechtheum, from the Propylæa, and the Temple of Priene, and some others, and he had no doubt whatever that the ultimate Ionic capital was so produced; but the first original idea may have been helped by the Phœnician forms.

DR. OHNEFALSCH-RICHTER, replying to the questions raised during the discussion, first referred to the imitation of wooden construction in stone. He was, of course, fully acquainted with the examples which had been found in Asia Minor, especially in Lycia and other countries. When, however, they looked at the illustrations contained in his Paper, they would agree with him that nothing hitherto discovered equalled the examples shown from the tombs of Tamassos. In what Mr. Phené Spiers had said about metal-work he agreed fully; it was very curious that most of the ornament was in metal—in bronze, in silver, and in gold. The question about Egypt and Assyria was, in fact, a very complicated one, and in his short Paper there were, of course, many questions he could not possibly touch upon. He had collected an enormous quantity of material on that very question. Undoubtedly a great deal of the influence came through Assyria. It had been the idea for a long time that the country of Assyria did not exist by itself—it was Egypt's heir. They found the lotus flower and lotus designs going from Egypt to Assyria, but he believed the origin was in Egypt. Then, in the complicated matter of the sacred tree, there also there was a combination: the sacred trees which were elements of the palm tree were evidently used. As regards the Greek Ionic volute and the Greek Ionic style, he only wished to lay the matter before them as evidence that the Greeks had created their own art. That was evident; but he thought that one of the elements, and perhaps the principal element, was to be found in the lotus flower which had been used. Of course the Greek Ionic capital had nothing to do with those illustrations directly; he only wished to place before them those Egyptian and Græco-Phœnician elements which they might consider as material they had used and transformed perfectly in their own way. If they saw what grew out of archaic Greek art, they met with quite a different art; but in the meantime opinion had changed considerably, and they could no longer consider that Greek art stood by itself in the world, and that the Greeks did not use materials, and elements, and motives, and types, and patterns from other countries.



9, CONDUIT STREET, LONDON, W., 19 December 1895.

## CHRONICLE.

### THE NOVEMBER FINAL EXAMINATION Qualifying for Candidature as Associate.

The President announced to the General Meeting of Monday, 16th inst., that at the Final Examination held from the 22nd to the 29th ult. 68 persons had been examined, simultaneously, in London, where 27 passed; in Liverpool, where 5 passed; and in Bristol, where 3 passed. The remaining 33 have been relegated to their studies. The names and addresses of the thirty-five who have passed, and are qualified for candidature as Associate, here follow:—

ALLCOCK: Edward Thomas; 19, Market Street, Wakefield [*Probationer* 1889; *Student* 1891].  
 ANDERSON: Henry Wheeler (Adelaide, S. Australia); 13, Merton Road, Wimbledon.  
 BLAND: John Douglas; 203, Chesterton Road, Cambridge [*Probationer* 1891; *Student* 1893].  
 BRAND: Walter; Sunny Bank, Warrington Road, Ipswich [*Probationer* 1891; *Student* 1893].  
 BURGESS: Cecil Scott; 22, Seton Place, Edinburgh.  
 CABLE: James McCurrey; 11, Acre Lane, Brixton.  
 COBB: Edmund Farley; Strood, Rochester [*Probationer* 1889; *Student* 1890].  
 DANFORD: Ernest Robert; 23, Clifton Bank, Rotherham.  
 DAVIS: Ernest Reuben Orton; 42, Regent Road, Leicester [*Probationer* 1890; *Student* 1892].  
 DOWN: Arthur; Underclyffe, Stockton Heath, Warrington.  
 DOWN: Edgar George Cusson; 43, Romilly Crescent, Cardiff.  
 DUNN: Herbert Henry; 75, The Bail, Lincoln.  
 FITZSIMONS: Nicholas (Belfast); 8, The Sanctuary, S.W.  
 FLOCKTON: Charles Burrows; Woodleigh, Worksop, Notts.  
 FORD: John; Clock House, Stamford, Lincolnshire.  
 FORD: Lawton Robert; 24, Railway Approach, S.E.  
 HADFIELD: Charles Matthew Ellison; Park Cottage, Sheffield [*Probationer* 1889].  
 HILLS: Osborn Cluse; 149, Bow Road, Bow, E.  
 HOOLEY: Tom Williamson; 40, Heaton Moor Road, Heaton Chapel [*Probationer* 1892; *Student* 1893].  
 JORDAN: Everard Eustace; 78, Woodsome Road, N.  
 LAWRENCE: George Churchus; Lynnwood, Tyndalls Park, Clifton, Bristol [*Probationer* 1890; *Student* 1892].  
 MORTON: Harrison; 8, Cann Street, Taunton.  
 NICHOLSON: Edwin; University Hall, Gordon Square, W.C. [*Probationer* 1890; *Student* 1892].  
 PALMER: William Edward King; Huntingdon Lodge, New Malden, Surrey.  
 POOLE: George Macfie (Sydney, N.S.W.); Beechwood, Barrhead, N.B.  
 REDFERN: John Lewis; 31, Parliament Row, Hanley, Staffs.  
 SHEPPARD: George Lewis; Sansome Walk, Worcester [*Probationer* 1893; *Student* 1894].

SMITH: George Richardson; 25, Sea View, South Shields.  
 SMITH: John Robert; 14, Union Court, Old Broad St., E.C.  
 SMITH: Percy Rider; 2, Montague Villas, Richmond, Surrey [*Probationer* 1889; *Student* 1891].  
 STEADMAN: Walter Henry; Gifford House, Alma Road, Clifton, Bristol.  
 STRATTON: Arthur; University College, Liverpool [*Probationer* 1890; *Student* 1892].  
 TURNER: Tom; 18, Provost Road, Haverstock Hill, N.W.  
 WHIPHAM: Edward Arthur; Glenholme, Saltburn-by-the-Sea, Yorkshire.  
 WOOD: Kenneth; Homeside, Westoe, South Shields.

## RESEARCHES IN CYPRUS.

### Dr. Max Ohnefalsch-Richter's Paper.

It may not be uninteresting to record that the author of the Paper on Græco-Phœnician Architecture, read on the 16th inst., was only introduced to the Council a fortnight before it was delivered. During that short period he produced his manuscript, in a language not his own, and the diagrams with which it was illustrated. The Paper was only completed on the morning of the General Meeting; and any haste that may be apparent in the text and illustrations printed on previous pages is due to the rapidity with which the whole has had to be prepared for press. The meeting was small, and the lecturer, who spoke English fluently, as so many Germans do, was listened to with marked attention. The Westminster Play, fixed for the same night, prevented the attendance of many members of the Hellenic Society, notably Dr. Walter Leaf; and the British Museum was not represented. Sir Henry Bulwer, a former High Commissioner of Cyprus, testified, as may be seen in his speech, to the indefatigable labours and irrepressible energy of Dr. Richter; and the meeting applauded heartily. Sir Walter Sendall, the present High Commissioner, would have attended the meeting had he not arranged to leave England for Cyprus on the subsequent morning; Mr. G. A. Macmillan was unable to attend, and Mr. Statham had another engagement of long standing.

## A RETROSPECT: 1842-95.

### Mr. Falkener's Acknowledgment of his Election.

The President, when formally admitting Mr. Falkener as an Honorary Fellow on the 16th inst., expressed the gratification he felt at being enabled to do so; and the Professor of Architecture at the Royal Academy, before moving the vote of thanks to Dr. Richter, asked leave to state how pleased he was to see, as a member of the Corporate Body, one whose works had made their author celebrated in every architectural centre of the world. Mr. Falkener, in replying to Mr. Penrose, referred to a communication on the subject of his election which he had already made to the Council, and which was addressed to the President, Fellows, and Associates, as follows:—

MR. PRESIDENT AND GENTLEMEN,—I thank you for the honour you have done me, for it is



no mean honour to find myself elected an Honorary Fellow of the Royal Institute of British Architects, and to see my name among those of great and distinguished personages; with that of the President of the Royal Academy; and, not least of all, associated with those of eminent members of this Institute; an honour which I owe to your kindness, and not to my own deserts.

I have arrived at an age when I can compare the present with the past. I remember travelling in Russia, more than fifty years ago, on my way to the Crimea, where I had been invited by Count Woranzoff. This was before the Crimean War. Six diligences ran every day between St. Petersburg and Moscow. From Moscow a carriage to hold four persons ran about twice a week to Kieff, if they could get four passengers. But from Kieff to Odessa there was no road whatever. Your only guide was the ruts of wheels as far as you could see on either side, running from north to south. If you held military rank you travelled by post, and on the postmaster not bringing you horses, you whipped him till he did; but I, having no military rank, was obliged to hire a half-covered cart with four horses; and as these had to be baited every four hours, I travelled by night as well as day; and one night, happening to see the polar star in front of me, I found that the driver had in the dark formed a half circle, and was going back to St. Petersburg. This part of the country was inhabited by Polish Jews, all speaking German. Men, women, and children slept together in their clothes upon the floor, and in the morning they dipped their fingers in the same basin, dried them on the same towel, ate their breakfasts, harnessed their horses, said their prayers, and made their bargains all at the same time and in the same breath. Only on that one night did I venture to enter an inn, and thus one of my feet became frost-bitten by exposure to the cold. This was in 1842, and what a change in Russia has taken place since then!

My memory also carries me back to a time when a venerable Society in this country had two Honorary Secretaries; one of whom wrote so bad a hand that it was said he could not write, and the other so bad a delivery that it was said he could not speak; and unfortunately the bad writer carried on the correspondence, and the bad reader had to read the Papers. I recollect also the time when another Society was so badly off for Papers that when the Secretary on one occasion read about one-third of a Paper, he suggested to the President (the learned Bishop Thirlwall) whether he had not better postpone the further reading till their next meeting, to which the President gave his consent with a smile; and on another occasion, where the editing was so carelessly carried on, that when a Paper on the Pyramids of Egypt was read and printed, the author was made to say (it was my friend the

late Mr. Watkiss Lloyd) that after considering the various theories which had been put forward for their construction—political, religious, ambitious, or otherwise—his firm conviction was that the pyramids were *spherical*. He had written *sepulchral*, but the editor had not corrected the compositor's mistake!

But all this is past; we are living in a new age. The secrets of nature, so long concealed, are now revealed to us; and every day some new discovery is made. Steam, electricity, chemistry, engineering, mechanism, have shown their marvels; every branch of learning is making rapid strides; learned Societies have sprung up into fresh activity, and new Societies rise up on every side; the masses are more educated; and literature, poetry, music, and the fine arts are in keeping with the times; painting, and especially portrait-painting, is becoming every day more excellent; sculpture is more real and living; and so the high position of architecture, as an art and a science, may be seen in the noble edifices which now adorn our metropolis and our provincial towns; and the architect of the present day, if he does not wholly come up to the requirements of Vitruvius—who said that an architect ought to know everything, and to unite in himself, as was often the case in the Middle Ages, the capabilities of the architect, the sculptor, and the painter—has accomplished much, and is likely to accomplish more from the way in which you train your students.

On your walls are the portraits of some of my old friends: the admirable, courteous, enthusiastic, and classic Cockerell; the indefatigable and learned Donaldson, your Foreign Secretary for so many years; and the genial, brotherly, and artistic Digby Wyatt; the hard-working Tite, and others; and I have the privilege of knowing some of your members of the present day, on whose praises it would be unbecoming of me here to descant; and there are others whose names are known over all Europe. But were there no other evidence of the high position of your Institute—may I say *our* Institute?—your JOURNAL alone would show the high station to which you have attained. Many of the contributions, of great talent, are written by your Associates, and therefore by comparatively young and aspiring men; though the *curriculum* of studies which they have gone through is sufficient evidence of their ability.

Deeply feeling, therefore, Mr. President and Gentlemen, your generous appreciation of my desultory work and labours, and the honour you have so kindly and indulgently bestowed upon me, and which I am proud to accept, I beg leave to offer you my most humble thanks.

#### Presentation of Prizes and Exhibition at Glasgow.

On the 10th inst. Mr. John Honeyman [F.], A.R.S.A., the representative of the Glasgow Insti-

tute of Architects on the Governing Body of the Glasgow and West of Scotland Technical College, distributed the medals and prizes won by the students at the recent Science, Art, and Technological Examinations. An instructive Exhibition was also open in the Architectural Studio. It consisted mainly of the "Testimonies of Study" submitted by Messrs. John Fairweather [A.], Robert W. Horn [A.], and James Lochhead [A.] for the Final Examination; and those of Messrs. Thomas S. Fraser [*Stud.*] and Thomas A. Moodie [*Stud.*] for the Intermediate Examination; also those of Messrs. William K. Anderson and James Mather, *Probationers* for the Preliminary Examination.

#### Drains and Sewers [p. 30].

##### The Town Clerk of Worcester's Scheme.

Mr. W. Arnold Jolly, B.A., Barrister-at-Law, of 2, Stone Buildings, Lincoln's Inn (whose name was given by mistake in the *JOURNAL* as "Arnold "B. Jolly"), has been good enough to send a further communication on the subject of "Drain" and "Sewer" in law, with which he is professionally familiar, as follows:—

About a month ago, I drew attention to the provisions of the Public Health Acts with regard to drains and sewers, and pointed out the contradictory nature of the decisions thereon. An interesting letter on this subject appeared in *The Times* of the 13th inst., from Mr. Southall, the Town-clerk of Worcester. We learn from this gentleman that the Council of the county-borough of Worcester have determined to promote a Bill next Session which, if it is adopted by the Legislature, will effect a radical change in this branch of the law. It is proposed by this Bill to assimilate the law of drains and sewers under the Public Health Acts to that relating to the construction and repair of streets.

Streets, under the Public Health Act 1875, may roughly be divided into three classes, viz. (1) highways repairable by the inhabitants at large, which are vested in the local authority by section 149; (2) highways which are not repairable by the inhabitants at large; and (3) streets which have never been dedicated to the public, and are therefore not highways. All streets which were dedicated to the public prior to the Highway Act 1835 are "highways repairable by the inhabitants at large." But streets dedicated since 1835 are not repairable at the expense of the ratepayers, unless either they were originally constructed by the local authority under section 154, or have been adopted by the authority under sections 146 and 152.

With regard to streets which are not "highways repairable by the inhabitants at large," section 150 empowers the local authority to give notices to the adjoining owners requiring them to execute all necessary works, such as paving, chan-

nelling, &c., and if they fail to comply with these notices, the authority may execute the works themselves at the expense of the adjoining owners. When a street has been made up to the satisfaction of the local authority, they may, *if they think fit*, take over the street; but if they do not choose to do so, the adjoining owners continue to be liable in respect of future repairs. According to Mr. Southall's scheme, a sewer will be equivalent to a "conduit repairable by the inhabitants at large."

Sewers will consist of (1) those conduits which have been constructed by or at the expense of the local authority, and (2) those which have been constructed by private owners, but have been subsequently taken over by the local authority. All other conduits are to be called drains, and to be repairable by "the owners of property for the "drainage whereof such drains are used," who will be in a position similar to that of adjoining owners in the case of streets. Thus the local authority will have power to serve notices on such owners, requiring them to ventilate and cleanse their drains, and, if they fail to comply with those notices, to execute the work themselves at the owners' expense.

There seems to me to be one difficulty in carrying out the analogy between sewage conduits and streets to its logical conclusion. A local authority cannot be compelled to make new streets, and I assume that new streets are, for the most part, made in the first instance by building owners who wish to lay out their property to the best advantage. On the other hand, a local authority is bound by section 15 to provide sufficient sewers for their district, and section 299 establishes a speedy method of enforcing this duty. The reason of this distinction is plain. Everybody realises the necessity of having streets, and it is impossible to lay out building-plots without making new streets, which are subject to by-laws under section 157; but a great many people are not alive to the advantages of having sewers. Now Mr. Southall proposes to repeal section 15, and thus leave the laying of sewers, like the construction of new streets, to the discretion of the local authority, or the enterprise of landowners. At present, if a landowner chooses, for the benefit of his estate, to put in a system of sewers, those sewers vest in the local authority, and the landowner is not liable for future repairs. But I doubt whether landowners will be prepared to construct main sewers for their property if the local authority has the option of refusing to take them over. On the other hand, the local authority may not in every case exercise the power (given them by the last part of section 23) of constructing a new sewer and apportioning the expenses among the owners of the houses which benefit by it, since the effect of that would be to vest the sewer in themselves. It is, of course, premature to criticise this proposed Bill until we



are more fully conversant with its details. It must, however, be admitted that the scheme is ingenious, and offers a possible solution of a very difficult problem.

## REVIEWS. XXXV.

(98)

### PROFESSOR PETRIE ON EGYPTIAN ART.

*Egyptian Decorative Art.* By W. M. Flinders Petrie, D.C.L. 80. Lond. 1895. Price 3s. 6d. [Messrs. Methuen & Co., 36, Essex Street, W.C.]

Here is a little book, written in such simple language that it might be a school handbook, every page of which teems with knowledge and study of its subject. Few men living have been so earnestly and continuously face to face with ancient Egypt as the author; and he here gives his reader the results of his observations, and deductions in one branch of his vast subject, concisely, clearly, and without dogmatism. How vast the subject really is may be indicated by two facts alone—first, that all Egyptian art was decorative; secondly, that Egyptian hieroglyphic art covers the enormous period of some 4,000 years. Well may Dr. Flinders Petrie claim for it an influence more far-reaching than has been hitherto discerned; for trade and locomotion were as possible, and at least as well organised, a thousand years before Christ as a thousand years after; and our author contends that, trickling through many an unseen channel during great periods of time, Egyptian art, in one form or other, found its way into regions far removed from any direct traffic with Egypt; and in those regions contributed to the birth or growth of a younger native art. "How difficult it is to man," he says, "to be 'original,' and he asserts that 'all ornament' of Egyptian type (wherever found) is lineally 'descended from Egyptian ornament.' He classes Egyptian ornament under four heads, as follows: (1) "*Geometrical*," of lines, spirals, and curves; (2) "*Natural*," as derived from feathers, flowers, plants, and animals; (3) "*Structural*," resulting from the structural necessities of building or manufacture; (4) "*Symbolic*," as having some symbolic or religious meaning. The plain zigzag line Dr. Petrie finds 4000 B.C.—that is, nearly 6000 years ago—yet some 2000 years elapse before the wavy line follows, with other simple modifications. In tracing the history of the spiral, or volute, in ornament, he dates his first example from the fifth dynasty; others follow at intervals with more or less development, similarly used in the space around a royal symbol. Of the time of the twelfth dynasty is given an example of the "chain of coils," known to us generally as the "Greek scroll." This also is used as a border to the royal symbol. I am surprised to find that Dr. Petrie puts aside all symbolic meaning for the scroll itself, and concludes that it is merely the artist's expedient, in every case, for filling an

empty space. I confess that, to my own mind, especially after seeing Dr. Petrie's illustrations, the conviction is strong that it was used to signify even then, as it did later on the Greek vases, water in motion; and that in these examples it probably implies the king's sovereignty of the river Nile. One example shows the scroll combined with the lotus (a combination handed down to us through Greek art), and is certainly favourable to this view. From later uses of the same scroll, as part of diaper patterns, Dr. Petrie seems inclined to derive the form from a coiled strip of metal used to ornament a surface. But, whatever the origin, its strong hold on the Egyptian mind, in one form or other, is well illustrated, as are also its developments under the influence of various technical processes of manufacture; and Dr. Petrie compares examples from Mykenæ to show the close contact with Egypt in the pre-historic ornament of Greece.

Not the least interesting remarks are those in which the use of ornamental feather-work is pointed out and illustrated, and reference made to the ascertained use of elaborate leather-work, with the explanation it affords of some peculiarities of pattern. In treating of the decorative use of representations of men and animals in Egyptian art Dr. Petrie makes one very striking observation. He points out that not until the time of Tahutmes (Thothmes) III. does the subjection and abasement of captives appear as a feature "introduced to emphasise the power of the 'king'; but that, after the Asiatic conquests of that period, the abasement of captives, 'the trampling down of nations' by the king, became an 'essential idea' to Egyptians. So persistent was this idea that even in Ptolemaic and Roman times foreign captives were painted on the soles of the burial sandals of the Egyptian, so that 'he might continue to tread down the Gentiles.' This is a very remarkable fact, which, so far as I am aware, has not before been expressed in such precise and simple terms. There is another fact observed which will perhaps startle some of Dr. Petrie's architect-readers as much as the last. The Egyptian decorator—even from the early period of the sixth dynasty down to the days of Cleopatra—"grained" in imitation of wood, of stone, and of granite; and perhaps, after all, there must be something to be said for an art which has been practised continuously for three thousand years before Christ, and ever since. The one decorative art in which we certainly owe nothing to the Egyptians is the art of painting everything *uniformly white*.

This excellent little work will be most usefully read by every one interested in art. It gives, in half an hour, a groundwork of the latest knowledge and much food for thought. Lastly, it has the pre-eminent merit of possessing a copious index, a table of contents, and references to the authorities quoted.

J. D. CRACE.



## MINUTES. IV.

At the Fourth General Meeting (Ordinary) of the Session, held Monday, 16th December 1895, at 8 p.m., Mr. F. C. Penrose, F.R.S., *President*, in the Chair, with 18 Fellows (including 8 members of the Council), 13 Associates, 3 Hon. Associates, 1 Hon. Fellow, and some visitors, the Minutes of the Meeting held 2nd December 1895 [p. 101] were taken as read and signed as correct.

The following candidates for membership, found by the Council eligible and qualified according to the Charter and By-laws, and admitted by them to candidature, were recommended for election, namely:—As FELLOW, Robert Williams [A.] (*Qualified as Associate* 1887); As ASSOCIATE, Charles James Hair (*Qualified* 1895); As HON. CORR. MEMBERS, Baron Albert von Lecoq (Darmstadt), and Frederick Skjold Neckelmann (Stuttgart).

Mr. Falkener [H.F.], attending for the first time since his election, was formally admitted by the President. The following Associates, attending for the first time since their election, were formally admitted, and signed the Register:—namely, Edward George Collins, Stanley William Worth Delves, Edward Greenop, and Percy Leeds.

The President announced the results of the Final Examination held in London, Liverpool, and Bristol from the 22nd to the 29th November, and read the names and addresses of 35 gentlemen who had qualified for candidature as Associate [p. 135].

The President announced that, by a resolution of the Council pursuant to the terms of By-law 20, the following had ceased to be members of the Royal Institute—namely, Francis Drummond Greville Stanley (Brisbane), *Fellow*; and George Thomas Poole (Perth, W. Australia), *Associate*.

A Paper by Herr Max Ohnefalsch-Richter, Ph.D., entitled GRÆCO-PHœNICIAN ARCHITECTURE IN CYPRUS, WITH SPECIAL REFERENCE TO THE ORIGIN AND DEVELOPMENT OF THE IONIC VOLUTE, having been read by the Author and discussed, a Vote of Thanks was passed to him by acclamation, and the Meeting separated at 10 p.m.

## PROCEEDINGS OF ALLIED SOCIETIES.

## THE LIVERPOOL SOCIETY.

## Some Thoughts on Old Furniture.

By E. Guy Dawber [A.].

Read 9th December 1895.

From the earliest times furniture has been so closely allied to architecture that I think no apology is needed for introducing the subject to-night. Old furniture has an interest beyond the mere appreciation of its beauty. The carving and ornamentation of the various pieces, the cleverness and skill with which they are constructed, and the materials of which they are made, are worthy of our careful study and contemplation. Furniture, again, is so closely interwoven with the habits and customs of past ages, and, like architecture, so clearly exemplifies the manners and tastes of the time, that it has an almost human interest. Nearly all the great changes in the style of furniture, in England at any rate, can be traced to events that are more or less connected with history; and we know that throughout all ages, when people have made a certain progress towards civilisation and the fine arts,

objects of ordinary daily use are ornamented, and develop into articles of beauty and refinement. Wood has been the chief material used, and it is owing to its perishable nature that so few specimens of early work remain. In the British Museum and the Louvre are examples of Egyptian furniture, amongst others chairs inlaid with ivory in a framework of ebony; and we see, by the many illustrations of these objects on the walls of the tombs, that chairs, stools, couches, and ottomans were used in an Egyptian house much the same as they are to-day.

From paintings on Etruscan vases, we have many examples of the furniture used by the Greeks, and from the classics we find that cedar and olive wood, inlaid with ivory and gold, were frequently used; and for sculpture, ebony, cypress, oak, and yew. Since the wonderful discoveries at Herculaneum and Pompeii, a great number of specimens have been obtained; and though not so refined in design as the Greek examples, the Roman furniture is remarkable for richness and luxuriousness. They had furniture in bronze, iron, and precious woods inlaid with ivory and pearl, and their houses were decorated with great taste and splendour. Much of the ornamental woodwork in the rooms was rich with carving, inlaid in some cases with tortoise-shell and ivory; the ceilings were painted, and in the larger houses formed into coffered panels, painted gilt and inlaid, sometimes with glass mosaics; the cornices were of carved wood or modelled plaster, and the walls covered with gesso, or gilt and decorated. In the British Museum are numerous examples of the furniture of these rooms, bronze and marble tripods, and candelabra of wonderful design.

Amongst other things, the Romans excelled in the manufacture of tables. They were made of all materials—gold, silver, bronze, ivory, and maple-wood—and were often engraved or damascened, and, like the Greeks and Egyptians, the Romans were adepts at the use of veneering and inlaying with precious woods. Cedar was much in demand for ordinary pieces of furniture, and pine was chiefly used for doors, panels, and constructive work.

Most of these specimens of Egyptian, Greek, and Roman furniture, though they have a style adapted to the materials used, possess no great architectural character.

It is difficult, and indeed impossible, to trace the continuity of design in furniture after the fall of the Roman Empire. The misfortunes of Italy—wars, invasions, and the struggle for supremacy amongst its States—were destructive of wealth and luxury, and the history of furniture now drifts eastward to the centre of civilisation at Constantinople. In manuscript illustrations, chiefly of religious subjects, we find the furniture for domestic use remained much the same as the Roman fashion; but gold, silver, and precious materials were more common, caused, perhaps, by the immigration of wealthy people into Constantinople. One thing is noticeable, that people no longer reclined at meal times, as the Romans did, but sat on chairs and benches as now. As, however, art declined in the East and the old world, it sprang into life with renewed energy in various parts of Italy; and the invasion of the Goths and others who settled in it infused new blood into the old municipal corporations. The cities became the parents of the future provinces of Italy, so rich in genius and industry, and so wealthy and powerful in peace and war.

Turning to Mediæval times, the history of art and literature is inseparable from the Church; and the strong religious feeling that swept over Europe, and induced men to give up their lives and fortunes to building churches and chapels, was fostered and encouraged by the monks; so that we find nearly all examples of furniture during the twelfth, thirteenth, and fourteenth centuries of an ecclesiastical character. The people had few luxuries, and lived greatly under the protection of the monastic establishments, or as vassals to the nobles of the country. The attempt to trace any history of furniture through this period is difficult owing to the scantiness of the materials; but from



prints and drawings we are able to see what the general forms were like.

Household furniture was in general coarse and rude, though of a substantial character: tables formed of boards on tressles, seats of massive oak benches, and the floors strewn with straw in winter, every day laid down fresh, and in summer with green rushes or boughs. The great almshouses, cupboards, or presses formed one of the principal pieces of furniture in most large houses. Chests, however, were the chief seats, and were also used as tables, and began in the fourteenth century to be fitted with upright backs and arm-pieces, much the same as are now seen in the old settles in farmhouses and country inns.

Most of the woodwork during the twelfth and thirteenth centuries was painted, and throughout England, France, and Germany oak was the chief material used. The joinery was very rough until the commencement of the fifteenth century, and none of the doors were panelled. They were plain ledged doors, nailed to cross braces behind, and decorated with iron scrollwork in the hinges, or else covered with tapestry and hangings. This style of work may be seen in old church doors, and the great semi-circular cope chests in York and Wells Cathedrals are typical examples both of the wooden construction and iron scroll work of this period. Wonderful beauty and perfection were attained in metalwork, wrought-iron especially; and locks, hinges, handles, and all kinds of objects bear testimony to this.

During the reign of Henry III. wall panelling in rooms began to be used, though it was very rare even then, and was not adopted as a mode of decoration until the sixteenth century. In the thirteenth and fourteenth centuries the walls of the great halls were painted with scriptural, allegorical, or other subjects, and even the walls of bedrooms were ornamented. Chaucer in his *Dream* describes them. Before tapestry became common in large houses, the walls of rooms were often painted to imitate it, and this style of decoration continued down to Elizabeth's reign and until the general introduction of panelling. Tapestry, commonly described by early writers as "hangings," was used for the walls of superior apartments from very early times; for we read that stained or painted cloths were frequently used to drape the walls of rooms during the tenth and eleventh centuries. They were generally hung from a series of hooks under the ceiling, and allowed to fall in easy folds from ceiling to floor—the walls behind being often not even plastered—and, like most of the furniture of this period, were movable. This, indeed, was the custom. The large feudal houses and manors were seldom continuously lived in, and the furniture consisted chiefly of such as could be carried from place to place on horses, and rooms were consequently only very sparingly furnished.

In large houses one servant, called the "upholder," was appointed to superintend the hanging and removal of the tapestry. It generally hung over the doors as well as the walls, and was pushed aside when entering or leaving a room. Historical and allegorical subjects were chiefly represented, though in the sixteenth century "parke-worke" and heraldry were very frequent. Examples of this work can be seen at Haddon Hall, where many rooms retaining their old hangings intact have an indescribable charm and interest. In other rooms painted cloth or stamped and embossed leather was used, sometimes let into a framework of oak ribs.

In the fifteenth century we read of the great houses containing many costly and splendid articles, as embroidered beds of satin and gold, tapestry hangings for walls, and magnificent plate: these, though, were mostly of foreign importation, for during the reign of Henry IV. a law was enacted that no man should bind his son to an apprenticeship unless he were possessed of twenty shillings a year in land, this law being passed for the promotion of agriculture, so that the deficiency of workmen could thus only be supplied by foreigners.

During the reigns of Henry IV., V., and VI. much of the manufactured furniture came from abroad, so much so that in 1483 we read of a petition to Parliament "praying for" a prohibition against the importation of cupboards, "tongs, fire-forks, stock-locks, keys, hinges, and painted glass." During the reigns of Henry VII. and VIII. many Italian workmen were invited to England, and there is no doubt that to some extent the Elizabethan style owes its origin to the influence of these men. Holbein painted a chimney-piece with grotesque ornaments at Cowdray, in Sussex, built in Henry VIII.'s reign; and Roberti, an Italian architect, built the staircase, which was painted by Pellegrini. This beautiful house was destroyed by fire in 1793, but enough remains to show what a magnificent building it must have once been. Italian workmen, as we know, were also employed at Hampton Court by Cardinal Wolsey, and in a great many other houses at that time.

In the sixteenth century, and while the Duke of Alva was ravaging the Netherlands, Flemish workmen came over in large numbers, and were encouraged to settle in England: the furniture of this period owes a great deal to their influence. We now read of Flemish chairs and turned chairs wrought in ebony, walnut, and cherry wood, with high backs, stuffed, and covered with leather, or one long panel filled with latticed canework. The furniture of the great hall, which until Elizabeth's reign was generally open up to the roof, and must have been a cold and cheerless apartment, consisted of a large table and benches, or stools, court cupboards with open shelves, for plates, pewter, treene, and hooks for leather jugs; and until the end of the fourteenth century a hearth in the centre on which faggots were piled, the smoke passing through an aperture in the roof.

Chairs during the first half of the sixteenth century were very scarce, and only used by the master of the house. The ordinary and most common kind of seats were stools and high settles, either in plain oak, or covered with carpet-work and fringed with crewel-work, or leather fastened with large brass nails or studs, though these are generally of later date. The tables, though plain with turned and moulded legs, were generally covered with the most elaborate embroidery, velvets, and satins, fringed with gold and silver, and Turkey carpets of very fine manufacture were used for these purposes. Cushions and pillows were becoming common in the houses of the nobility, and, with the hard, unyielding lines characteristics of the furniture of this period, must have been essential to any degree of comfort or richness of appearance.

At the end of the sixteenth century, when the use of plaster for decorative purposes was coming into use, and the rooms were reduced in height and had flat plaster ceilings, nearly all the principal rooms were lined with oak panelling, and carving and even inlay were occasionally seen. At Hardwicke Hall, in 1570, the woodwork in several rooms is of oak, inlaid with ebony on the styles and rails; and at Sizergh Castle, in Westmorland, a very beautiful room, now fitted up at South Kensington Museum, has the panels inlaid with black bog oak and holly, in geometrical designs, divided at intervals by tall pilasters with Ionic capitals and flutings of bog oak. Great cabinets of oak, inlaid with ebony and ivory, were frequently used; and the common chests or coffers, which had for centuries past formed the general repository for articles of all kinds, now became richly carved. Screens, in six and eight folds, were made either in needlework or painted and embossed Spanish leather; and mirrors, though but little known at this time, began to be used in bedrooms, and were made of polished metal. Pictures, however, adorned the houses of the wealthy in considerable numbers, and those of value had silk curtains fringed with gold hanging in front to protect them from the light. Imagine carved and inlaid bedsteads with hangings of cloth of gold, paled with white velvet and black damask, and embroidered with heraldic badges; blue velvet powdered with silver lions,

black satin with gold roses, tapestries of cloths of gold and silver, services of gold and silver plate, &c.! Yet such furniture was not uncommon in the houses of the nobility at this time, and must have exceeded in magnificence any idea we can form of their effect and richness. On the other hand, the comfort of a carpet was almost unknown—straw and rushes, until quite a late period, being the only floor covering—as the hand-made carpets from Turkey and the East were used for draperies and hangings, table-covers, &c.; and though spoons and knives had been in use since the time of Edward the Confessor, forks were but little known before the Restoration, and the fingers supplied their place.

Broadly speaking, during the Middle Ages the houses of the nobility were more magnificent than comfortable, and the lower orders of society were miserably lodged, though, to a certain extent, what we have gained since then in comfort and convenience is at least to some extent counter-balanced by our loss in grandeur and durability. From the end of the fourteenth century, when furniture was breaking through its ecclesiastical environment, and up to the time of the Renaissance, to a certain extent it was in a state of transition. There was no definite decided tradition, and it was only through the Renaissance in Italy, when the taste for classic literature led to the study of the arts connected with it, and after its development in England towards the end of the sixteenth century, that a real national style can be traced.

Up to this time furniture had been simple and severe in character, without much ornamentation, and only made for actual requirements; and furniture in the sense that we know it for decorative purposes was almost unknown. Each piece fulfilled a purpose, and beyond that no other was made. Panelling, though still, with tapestry, the principal decoration in rooms, now became strongly tinged with an architectural character, and the "five Orders" came into frequent request. Dentils, flutings, egg-and-tongue, and other classical details were introduced, and some attempt at architectural composition was aimed at. Heraldry, with carved mantlings and quaint escutcheons, with scrolled edges, strap-work, and pierced fret-work, were introduced into friezes and cornices.

About this period Inigo Jones had returned from Italy, and there is no doubt that a great deal of the work of that time was due to his influence, as to that of other architects in the succeeding centuries. Sculpture, in the form of caryatid figures, half men and half monsters, became the fashion. Grotesque terminal human-headed figures supported the fronts of cabinets and dressers, and formed one of the principal features in the chimney-pieces of James I. and after. At Stokesay Castle, in Shropshire, the chimney-piece in the Gatehouse is a typical example of this kind of work, and dates from the early part of the seventeenth century, and numerous other instances may be called to mind.

The furniture of the first half of the seventeenth century is essentially English in character, and though based, to a great extent, upon classical influence and detail, it retains a sturdy independence of thought and design that places it apart from any other. Indeed, this may be called the best period of English furniture, inasmuch as it was a national style, and it is most interesting to trace the similarity of detail and tradition that runs through it.

The old Court cupboard with open shelves now becomes the elaborate cabinet, with cupboard and folding doors below, recessed upper part and overhanging top, with turned and moulded drop-pendants; the whole richly moulded and carved, and sometimes inlaid, and forming a grand piece of furniture—often framed into the panelling, and treated as a structural part of the room. In Lancashire, Yorkshire, and Shropshire many of these remain, and a short time ago, in a dealer's shop at Warrington, could be seen a very fine example. Shropshire and the West of England are particularly rich in this class of work,

owing to the extensive forests of oak that grew here in the sixteenth and seventeenth centuries.

Numerous illustrations of these cabinets, and the furniture of the early part of the seventeenth century, can be studied in the excellent work published by Mr. Arthur Marshall, *Specimens of Antique Carved Furniture and Woodwork*. In it he says:—

In the old halls and dining-rooms there were, at least, two great "chayers"—sometimes with stuffed backs or wings, but in most cases they were of oak, walnut, or cherry—with richly carved backs and rails, and turned or carved legs. Names, dates, emblems, or legends were often carved upon them, and occasionally they were seen with woven cane backs. The designs of these chairs were adapted from those introduced by the Flemings, but the style of the carving was quickly changed, and stamped with a character that was peculiarly English. Of the single chairs there was not so much variety, large numbers being produced from few designs: these are to be found in all parts of the country. . . . The two kinds peculiar to the counties of Derbyshire and Yorkshire were perhaps the commonest, and are the most frequently met with at the present time. . . .

As the Stuart period developed, leather, damask, and silk backs were substituted for the rich carving, and instead of the substantial, severe lines of the legs and arms, they were made in fantastic curves, and what little carving was introduced represented either a crown, shield, or a thistle, or festoon of flowers.

Chairs in early work had their rails close down to the floor—to keep the feet off the damp stones, and to hold the legs of the chairs firmly together. When boarded floors came into fashion, the front braces were raised and more freedom given to the feet; then the side braces were raised as well, and eventually the front one was omitted and put between the side ones farther back. Another form of seat of very early origin and of great popularity was the settle. One clever example, convertible into a table when not required as a settle, is often met with in Somersetshire. The top is hinged at the back, and rests on the settle-arms when serving for a board, and lifts back and assumes an erect position when used as a settle.

During this period a very great deal of furniture was imported from Italy, and the peculiar chairs at Knole, made for the visit of James I. and covered with crimson silk velvet, are doubtless derived from the old Venetian patterns. The chair supposed to have been used by Charles I. at his trial, and given to Bishop Juxon afterwards, and now in the hospital at Moreton-in-the-Marsh, Gloucestershire, is another example: this is covered with velvet and silk frieze, and closely nailed.

One characteristic detail of the Jacobean period must not be omitted. Turned work for legs, balusters, newels, &c. was in great request, and small turned balusters with acorn-shaped terminations were split and laid on the styles and rails, and turned drop ornaments were added below tables and chairs, and from the centres of the arches in chair-backs. These are particularly noticeable in the Derbyshire and Yorkshire chairs. Towards the middle of the century the turning became gross and exaggerated in appearance; table legs and newels swelled into heavy acorn shaped masses out of all proportion to the rest of the leg, the carving became somewhat heavier and coarser, though still a great effect of richness was gained, even at a sacrifice of purity of style. This, no doubt, was owing to the frequent intercourse with the Netherlands, and it is almost impossible in many cases to distinguish the nationality of Flemish and English furniture during the middle of the seventeenth century, though, as a rule, the figure sculpture of the Netherlands was of a higher character.

The restoration of Charles II. caused a general influx of much foreign furniture from Holland, Flanders, and France, and to this we owe the mixed character of the work of the latter end of the century. Up to this time, however, in England chairs, tables, and cabinets were



nearly always constructed with straight framings. The legs, stretchers, and braces were straight; the backs, though slightly falling over, were still straight, and the graceful sweeping lines and curves of a later period were quite unknown, if we except the furniture, uncommon even at this period, based upon Italian models; but a change had long since set in on the Continent, and when William III. came to the throne, though the old style and construction lingered for nearly another fifty years in the country districts, the character of furniture was entirely altered.

The principal innovation was the cabriole, or bent-knee leg, which before this time had not been seen in England; and this fashion very soon usurped the old heavy square-framed chairs and tables, and was used wherever supports of any kind were needed. The fashion was taken up with vigour amongst English cabinetmakers, and though at first the legs of tables, and chairs especially, still had cross braces and stretchers, they were made much lighter, and in a more graceful style. A delicate shell ornament was carved on the knee of the leg, the foot was sometimes modelled after a lion's or eagle's claw—an almost direct copy of the feet of the old Roman tripods centuries before—and the wide, curved, and hollowed centre panel of the back was carved with a shell at the top, and delicately inlaid with marquetry.

In country districts the cabriole leg was not so common, and plain square straight legs, with side braces and cross-stretcher, were more used. These chairs must not be confounded with those of Chippendale, nearly fifty years later, and which, with those of Queen Anne, form a school of themselves. Carving to a great extent was not much used, and furniture was often now entirely veneered with mahogany, which, although it had been discovered by Sir Walter Raleigh in 1595, was only gradually coming into use.

This period of the eighteenth century produced a great deal of very excellent, sound, well-made furniture; and though the taste for marquetry soon died out in England, the models of the Low Countries were fairly closely adhered to. As a rule, the backs of chairs in this early period were formed of a wide cut and shaped centrepiece, between two side uprights, connected at the top by either a straight or shaped rail. Chests of drawers, in pairs, the top ones fitting into the lower, or standing on a low frame supported by legs, were very common, and tables with cut and shaped rails are well known.

Sir Christopher Wren at this period had been for some years rebuilding London, and St. Paul's was drawing towards completion, and his influence, like that of Inigo Jones in the preceding century, was very great. The broken and curved swan-neck pediments began to be introduced into furniture, into chimney-pieces, over doors, &c., and his peculiar style of carving, of which, perhaps, Grinling Gibbons was the chief exponent, soon caught the popular taste. Pine became common for panelling, and owing to the widths in which it could be obtained, and the ease with which it was worked, houses were frequently lined from top to bottom with it.

This was the age of constructive joinery and beautiful carving, and whether in oak or deal one single style and tradition permeated the whole country. If we see any building of the first half of the eighteenth century, in almost any part of England, we know the exact detail we shall find. The mouldings and carving may vary in some small minutiae, but the style and spirit are the same everywhere; and it was much the same with furniture until the rococo or French style invaded the country.

Some very quaint chairs were much in vogue in the country districts at this time, made either in ash or other home-grown timber, and are even now frequently met with in Gloucestershire. They have a straight, tapering leg, with a few inches of turning under the top rail, and a turned foot, cross-stretchers, and side-rails, a withy seat, and

upright tall backs, with small turned terminals and cut and shaped slats from side to side, perhaps five or six in the height of the back. These were made plain, or with arms carried by the front legs, which were brought up to support them, and altogether are most picturesque chairs. Mr. Aldam Heaton attributes them to French influence, and tells me of a church in Jersey which he once saw full of them; but I am inclined to think them essentially English, as it is somewhat improbable that the Cotswold district, in which they are chiefly seen, should have had much intercourse with France. As an instance of the fact that furniture was made in the country districts by local men as well as in towns, it is noteworthy that a great deal of that found in the Cotswolds was in elm or beech, this being the chief timber grown on the hills.

Mirrors were becoming a very favourite form of decoration in rooms now, being imported ready-made and carved from France, and glass was much admired and sought after. Some were of glass cut into large sheets, as wide as the casting would allow, with very flat hand-ground and bevelled edges, cut and shaped to quaint patterns, the joints sometimes covered with bands of metal or strips of cut coloured glass fastened with rosettes. These are very common at Versailles and Fontainebleau, and there are some few examples at Hampton Court in Wren's work—in two chimney-pieces, and let into the sides of several rooms.

There is no doubt that the so-called Chippendale style was not only borrowed but copied almost direct from the French; and Mr. Aldam Heaton, in his beautifully illustrated work on *Furniture and Decoration in England during the Eighteenth Century*, goes very far to prove this. Chippendale came from a family of carvers, his father being in the trade, and having a shop and large business connection in St. Martin's Lane in London. At first he was probably a maker and carver of the flamboyant frames and mirrors and girandoles lately introduced into England from France, and there is no doubt that he at this time came under the influence of Sir William Chambers, who had just returned from China. Before Chippendale published his work in 1754 several books bearing on the subject of furniture had been issued—one by Copeland in 1746 being simply a collection of designs for mirror-frames, and showing a very strong French influence.

It is interesting to note that hardly any of the work erroneously attributed to Chippendale can be found in his books; indeed, one may say that the public of to-day generously classify the furniture from William and Mary down to the beginning of this century as "Chippendale"; and, though so much of this furniture still remains in England, it is improbable that he had anything to do with it. Chippendale's work can be roughly divided into three styles: what he describes as "Gothic," of the very worst churchwarden type, and which is only valued from its extreme rarity; "Chinese," based no doubt upon the result of Sir William Chambers's work, and which is equally ugly and stupid, devoid of all taste and character; and lastly, "French," copied almost direct from that of Louis Quatorze; indeed, many of his designs are almost identical with French furniture of this period. After a time its parentage became lost, its eccentricities were toned down, and it developed into the style we know so well. His work is generally characterised by great breadth and solidity, always in the solid mahogany, richly and exquisitely carved, and is distinguished by prominent, if eccentric, ornament. In his work based upon French models his chairs had beautiful cabriole legs with claw-and-ball feet, the arms being richly carved, often with lions' or other animals' heads, though, as a rule, he confined himself to his favourite ribbon pattern or the foliated or curved endive scroll and shell work. He used no inlay of any kind, and depended entirely on his carving and the shape and form he gave his pieces of furniture.

Chippendale was a great advertiser of his own wares,

and the bombastic and grandiloquent language used in his preface shows that he was a man of neither education nor modesty. Many of his designs were merely suggestions of what he could make, and were probably never carried out. For instance, to Plate CXI. he says: "A China case, not only the richest and most magnificent in the whole, but perhaps in all Europe. I should have much pleasure in the execution of it," &c. Another type of work he did was confined to wall decorations, mirrors, girandoles, and overmantels of weird and extraordinary detail—rock-work and dripping water, generally carved in pine, entirely gilt, with the more prominent parts burnished. Indeed, at this period a great many books were published of designs for furniture, all more or less trade catalogues, by Mathias Look, Copeland, Ince and Mayhew, and many others; and about 1769 we find "a Second Edition of Genteel Household Furniture in the present taste, with an addition of several articles never before executed by a Society of Upholsterers, cabinet makers, &c., containing upwards of 350 designs"—all very much resembling in general character the designs of Chippendale.

These books were issued broadcast all over England, and to their influence must be attributed most of the furniture then made; but in country districts it was much simplified, though conforming to the taste and fashion of the time as much as possible.

The end of the eighteenth century is full of rich furniture work, and both architects and cabinetmakers vied with one another in designing and producing beautiful pieces. Ince and Mayhew, Thomas Arch and Swan, both architects, Shearer, Darley, and Richardson all did excellent work; but as they worked more or less in the same school of design, it is almost impossible to distinguish one from the other. In 1789 Heppelwhite published a book on furniture, besides making a great deal himself. His designs are more conventional than Chippendale's—the legs of the chairs and tables are straight, and a general lightness and delicacy pervade his work. His favourite ornament is the diminishing bell-flower or wheat-ear, and his chair-backs were heart- or shield-shaped, with the thin ribs gathered together into a medallion in the centre, or else with the Prince of Wales's plumes filling the top.

But perhaps the men who had most influence on the style of furniture were the brothers Adam, who about this time returned to England from their travels in Italy, and published their works on Roman architecture and decoration. Their books revolutionised the existing styles of furniture, and enabled designers to grasp with accuracy the detail and feeling of the new style. In their own designs they embodied the results of their travels, and adapted them to modern requirements, perhaps at first slightly tinged with the French feeling then in vogue.

The Adam brothers, Robert especially, besides designing houses and all the interior fittings, in a great many instances designed the entire furniture as well—chairs, tables, mirrors, girandoles, carpets, wall papers, and even the silver, and door furniture, grates, &c., are frequently met with in their books.

Adam furniture is very elegant in design and construction, and somewhat resembles in lightness the French furniture of Reisener. The chairs particularly, often graceful oval designs, are very different from the broad, sinuous, and bold lines of Chippendale and his school. Robert Adam based most of his furniture on classical sources, and in this it is very like the French Empire work. The furniture in his time was designed not only for the room, but for particular positions in the room, and his fireplaces especially, with the beautiful chimneypieces, made of statuary marble, delicately inlaid and exquisitely carved, with the tall mirror over, and attendant girandoles, make most effective pieces of decoration. There is a peculiar airy grace, with a perfect sense of proportion and fitness, about Adam's furniture and his work that is especially

captivating; and this, no doubt, is owing to his architectural training.

Another furniture-maker, and perhaps the greatest of the century, was Thomas Sheraton. Quick to perceive the beauties and adaptabilities of the new style, he used largely the classical ornament and detail in his work, and nearly all of it can be traced to the antique examples published by the brothers Adam. There is great sincerity and truthfulness in his designs, and ornament and decoration are only introduced as part of the expression, and admirable construction and perfect workmanship are always found in his best examples. Sheraton nearly always used inlaid woods, and seldom had recourse to much carving; his ornament is very chaste and severe, chiefly consisting of a combination of classical urns, rosettes, festoons, and swags, and his favourite pendant bell-flower, the latter being frequently used. All the lines of construction are clearly marked; the legs of his tables, chairs, cabinets, and sideboards are straight, either turned, fluted, or tapering square, generally made of Spanish mahogany, and the surfaces between the supports inlaid with woods of different colours, chiefly satinwood, pear, or ebony, or lighter woods stained green, yellow, and brown. His work is noted for curved surfaces—the fronts of his sideboards and cabinets of graceful sweeps reflecting the light, and forming a pleasing contrast to the verticality that runs through his work; its simplicity of outline is one of its greatest characteristics. He, like Chippendale, Heppelwhite, and others before him, published a book of designs; and perhaps it is to this more than to anything else that his peculiar style of work is called after him, for he probably had nothing whatever to do with the many pieces which are attributed to him, and which were doubtless made from his published designs in other workshops. He has given his name to a style, then in the zenith of its popularity, perhaps not so much for the excellence of his own workmanship as for his having published a book on his art. There is no doubt that his influence was greatly felt in the country, even more so than that of Chippendale, and a great quantity of refined and quiet work was the result. The list of eminent cabinetmakers may be fitly closed with Gillow, whose speciality was inlaying with delicate threads and frets of brass; but his work is not particularly captivating, or in any way equal to that of his predecessors; and after him furniture designing so rapidly declined that it might be regarded almost as a lost art.

In the beginning of this century, only some few years after Sheraton's time, a detestable fashion of furniture set in, utterly devoid of taste, or any quality that we can imagine would appeal to people of education; yet to make room for these articles imported into their houses, our ancestors turned out much beautiful old furniture, and very often either sold it or gave it away to servants, through whom it was broken up and destroyed or drifted into cottages. Hence it is that so much of this old eighteenth-century furniture is found, or used to be found, in houses and situations for which it could not possibly have been made in the first instance. The old seventeenth-century oaken furniture had long since gone to make way for that of Chippendale and the men that followed him, and it is sad to reflect on the degraded taste that in the beginning of this century was the cause of so much harm and loss; for we must recollect that up to this time furniture-makers worked in the old traditional school of their fathers and grandfathers, and the only changes in fashion were, if anything, for the better—a striving for more refinement and dignity, which all must admit the furniture of the close of last century possessed in a very high degree.

In the seventeenth and eighteenth centuries the influence of architects in guiding public taste was evidently much greater than now, and the published works and drawings of such men as Inigo Jones, Wren, Chambers, and the brothers Adam show that the designing of the fittings and



furniture of a house came well within the scope of their work.

In the limits of a short Paper it is difficult to do more than touch upon the leading phases and characteristics of the principal styles of furniture in England alone, and to attempt to deal with those of other countries—the French, German, or Italian—is quite impossible; indeed, the subject is so exhaustive, and if pursued thoughtfully so engrossing, that to deal with the detail and treatment of one single style amongst the many I have indicated would take a long time. In the short *résumé* given we see how greatly English furniture was indebted to foreign influence; and that the two great epochs that produced the finest furniture—the Renaissance of the early seventeenth century and the latter half of the eighteenth—owe their origin almost entirely to foreign parentage.

The furniture of the eighteenth century is full of interest and charm, and it seems difficult to find an article or fitting made at this period without some artistic merit, for the hand of the true artist is evident in all. Furniture was then made to last, and not to sell; time was not an object, as with us; and suites of furniture to supply a “long-felt want” at so many pounds sterling were unknown. When the craze set in some twenty years ago of filling houses with old furniture, the country was a mine of wealth to the dealer and collector; and though the bulk of it has long since been cleared away, a great deal yet remains, and in many towns and villages in England valuable and interesting specimens can be seen and obtained.

Not many years ago, when I was living in Gloucestershire, it was no uncommon sight in the remote out-of-the-way villages lying in the Cotswold valleys to meet with dealers from Oxford, Witney, and other towns, buying up old furniture of any date, ransacking the cottages from top to bottom, and returning with their vans laden with spoils; and if this old furniture had been merely cleaned and carefully repaired, and then sold and distributed into more appreciative hands, no one would complain; but, unfortunately, this is not generally done, as the plainer furniture not appealing to the public is nearly always covered with modern carving, entirely doing away with the interest of the original pieces.

The old so-called “Grandfather” clock cases are perhaps the greatest sufferers: these came into fashion about the last half of the eighteenth century, and Chippendale and all the great masters of that time made special designs for them. A great many were lacquered—and very valuable they now are—the cases being made in England and sent out to China in the tea-ships; but as only a limited number could be obtained, and the demand greatly exceeded the supply, the Dutch invented a poor imitation of the Chinese lacquering, and for a time monopolised the entire trade, until the fashion died out in England, though even now it is done in Amsterdam. The early cases were of oak, plain, with a square or domed top, and the later ones inlaid and moulded with the straight or scrolled pediment. There is no mistaking their date, and yet the dealer generally carves them in the most ostentatious and ignorant way, and nearly always in imitation of the Jacobean work of 150 years before.

The glass used in mirrors and dressing-glasses is another rock upon which the modern furniture-maker comes to grief. The old glass was very thin, of a delicate pinky hue, and with a soft narrow bevel ground by hand, and necessarily very flat, which constitutes the charm of the bevelling. The modern furniture-man uses glass a quarter-inch thick, and grinds the bevel by machinery with a mathematical precision to a very steep angle, so that the mirror presents a bewildering series of facets and reflections, entirely losing the charm of the old work. But one could go on multiplying instances indefinitely, and I should only weary you with a dismal catalogue. These, of course, are only the black sheep amongst the dealers, for there are many who scorn to touch a genuine

piece of old furniture, and whose collections contain much that is full of interest and educational value.

The study of old furniture is one of the many pleasant by-paths of our profession, and one that I am never tired of wandering in; and if these few remarks should induce any of you to follow the same road, I feel sure you will be amply rewarded.

## LEGAL.

### The Obligations of Building Owners.

NORRISH V. NOKES.

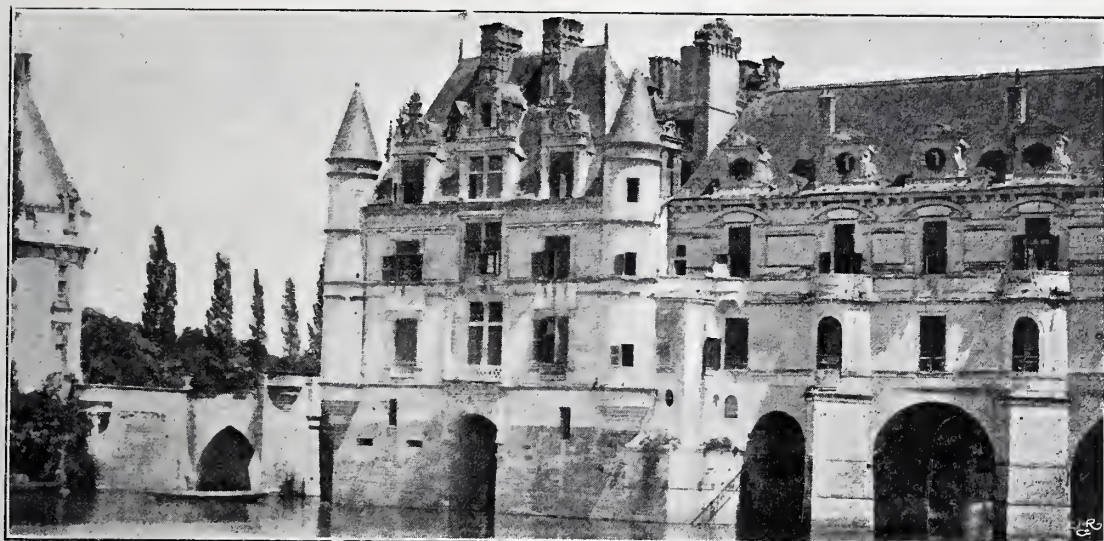
The following case, the report of which is taken from the *Law Journal* of 14th December, is of importance as deciding that the building owner and not only the builder is liable for failure to give the statutory notices as to drains under the Metropolis Management Acts. At the Southwark Police-court, before Mr. Fenwick, Mr. Walter Nokes, of Crouch Hill, and 10, Silk Street, E.C., was summoned by Mr. George Roper Norrish, surveyor to the St. Saviour's Board of Works, for that he, being the owner of 29, Brunswick Street, had made certain drains without having given notices and submitted plans, and without having obtained the assent of the Board, contrary to the provisions of the Metropolis Local Management Act 1855.

Mr. Topham, solicitor, prosecuted, and Mr. R. J. Woodfin, barrister, defended.

At the hearing evidence was given in support of the summons, and also to the effect that the drains were badly constructed, and would have to be made afresh. For the defence, it was submitted that the defendant instructed a contractor named Fitzgerald to give the necessary notices, and that Fitzgerald neglected to do so, but that the defendant was not responsible for his default. Moreover, that for the time being the contractor was a lessee at will of the ground, and it had been held that a freeholder was not liable for the laches of a lessee.

The magistrate said that the question was whether there was a clause in the contract between Nokes and Fitzgerald binding the latter to give the necessary notices, and whether Nokes was the first person who began to lay the drain. In *Gray v. Pullen* (34 Law J. Rep. Q. B. 265; 5 B. & S. 970), the Court held that the contractor was not liable for civil damages.

Mr. Fenwick, on 5th December, after taking time for consideration, gave the following decision: A number of authorities have been forwarded to me to refer to, and I have referred to them. Section 76 of the Metropolis Local Management Act 1855 says that before making any drain, &c., seven days' notice must be given to the vestry. Section 88 of the Metropolis Management Act 1862 says that if any person without giving notice shall make any such drain he shall be liable to a penalty of £5 and a continuing penalty of 40s. a day. In the present case the defendant undoubtedly employed a contractor to make the drain and to give notice, and the proviso that he should give notice was inserted in the contract. The contractor made the drain, but did not give the notice, and the question is whether the defendant is liable to be penalised. I have given the case my best attention, and my opinion is that it practically comes within the principles laid down in *Gray v. Pullen*. I think that Nokes is the person who began to make the drain, and upon whom rested the obligation to give notice. I think he cannot contract himself out of that obligation. But, although he is technically guilty, I believe that he acted throughout without any *mala fides*, and that his conduct was perfectly *bona fide*, inasmuch as he expected that the contractor would give notice as Nokes had arranged for him to do. Under these circumstances I think it is a case for a nominal penalty only. I will fine him 5s., and 1d. a day for fifty-six days, and 4s. costs.



### THE ARCHITECTURAL LITERATURE OF FRANCE: A BRIEF HISTORICAL SKETCH AND REVIEW.

NONE of the comparatively small, semi-public libraries of the United Kingdom preserves a more valuable collection of French works on Architecture, or, as the men of the Renaissance called it, the Art of Building, than that of the Royal Institute of British Architects; and the fact is largely due to the happy relations which have existed, since the foundation, between the Institute and its distinguished Honorary Correspondents in Paris and the great cities of France. Many of these books contain an autograph letter, a dedicatory inscription, a compliment of some sort, which afford a gratifying reminder of the donors whose names are familiar to their colleagues in this country, belonging as they do to the history of Architecture during the current century. To treat here of this important section of French literature is now attempted, the subject to be distributed under three heads: comprising, first, its Source of inspiration and Pioneers; secondly, its Masters and Arbiters; lastly, its Professors and Bookmakers. The story, both interesting and comprehensive, is full of inconsistencies and contradictions: of one age's undoing and reformation, of another's progressive developments and ultimate retrogression, of a third's stagnation and subsequent revivals, all tending to accentuate the human affinities of Architecture—to show that the life of historic monuments resembles the life of humankind. And if, according to Swift, one registered all a man's opinions upon love, politics, religion, learning, beginning from his youth and so on to old age, what a bundle of inconsistencies and contradictions would appear at last! It is the same with the records of centuries, whether told in stone or printed on paper. Forty years ago Viollet-Le-Duc said that French artists, to their shame, rushed through France to Rome, never opening their eyes until they had reached Genoa or Florence; and that they returned to Paris with portfolios full of random sketches of Greek, Roman, and Italian works, without having set foot in an historic building of their own country. Nor, until the current century had run a third of its course, did Englishmen think it worth their while to stop at French cathedral-towns for study. In the last century they, too, hurried on to Italy; or if, like Wren a century earlier, they were prevented from going further east than Paris, they had no eyes for Notre-Dame and Saint-Denis, for the remnants of Cluny and Vincennes.



But the whirligig of Time has its revenge among British architects to-day. Many of those who, a quarter of a century ago, could see no architectonic beauties in France, except in her mediæval monuments, now admit that the architecture of the Bourbon dynasty has, not only inherent merits, but almost a right to be called national—the very men who, in the sixties, looked contemptuously on a tower by Philibert de L'Orme, a palace by Serlio, a château by the elder Mansard, but to whom a village church, a castle and an abbey in ruins were then idols it would have been irreligious not to admire. And who shall say that these inconsistencies, these contradictions, have done harm? Amusing as they may be, perhaps, to a few who are on their way out of the world—damaging as they have been to the course of progressive architecture—architects are gainers thereby in knowledge and learning. The mature, practical philosophy of Bacon anticipated Swift, and left him an answer, written two centuries earlier, in the words: “Doth any one doubt that if there were taken out of men’s minds vain opinions, “flattering hopes, false valuations, imaginations as one would and the like; but it would “leave the minds of a number of men poor, shrunken things?” And so to the point, with a sketch, however cursory and imperfect, of French architectural literature—the best and, although founded on the works of the Roman author and his Florentine exponent, the most original and suggestive that the world has known.

## I. ITS SOURCE OF INSPIRATION AND PIONEERS.

The man may be thought rash, in these enlightened times, who ventures to assert that if Alberti had not written *De Re Edificatoria*, if his book had never been printed, nor Jean Martin’s translation published, France would have seen no architectonic revolution in the sixteenth century. It may perhaps be more reasonable to assume that if those pregnant events had not occurred, the rise of architectural learning would have been retarded; and there is abundant authority for the assumption that Literature was the first and most potent factor of the Renaissance. For in spite of the practical architect, Serlio, who, born at Bologna in 1475, died at Fontainebleau in 1552, after a long sojourn in France—in spite of the Italian Vignola, who died in 1573, and who, though he spent only two years in France, and whose name is still a household word with her architects, was hardly known to them until the latter half of the seventeenth century—the great theoretical work of Alberti exercised an influence over the French only less in degree than it had previously exercised over his countrymen. There were men of architectural learning in Italy before Palladio (1518–1580) who may be said to have consolidated the Italian Revival; but Philibert de L'Orme, who died in 1570, and the first Du Cerceau, who died in 1585, had no predecessors among their compatriots. Michelangelo and Serlio, Vignola and Palladio, Philibert de L'Orme and Du Cerceau, were contemporaries; but more than a hundred years intervened between the birth of Alberti and their arrival at years of discretion. Pierre Lescot, who is credited by Quatremère de Quincy with the design of a portion of the Louvre,\* was also a contemporary of Philibert de L'Orme; but he has left little, except a reputation, to warrant the connection of his name with that of his illustrious countryman.

No attempt is here made to undervalue the influence of Bramante in the great international movement known as the Reformation or Renaissance, supported as it was by the travels of Frenchmen in Italy and the migration of Italian artists to France. All that is here suggested is stated with full knowledge of Baron von Geymüller’s Paper on “The School “of Bramante” and with due deference to the opinions of its learned author.† But he has

\* *Histoire de la vie et des ouvrages des plus célèbres architectes* (vol. ii. p. 65). 4o. Paris, 1830.

† See TRANSACTIONS, N.S. Vol. VII. (1890–91), pp. 93–142.

produced no absolute evidence to show that Bramante (1444–1514) ever put on record the precepts and principles which guided the design and construction of the buildings attributed to him. The indirect influence exerted by Bramante upon the evolution in France of the *Styles Louis XII.* and *François I.* was mainly due, it may be assumed, to Serlio, who was the pupil of Baldassare Peruzzi, and who inherited his Papers or “secrets,” Peruzzi having been one of Bramante’s draughtsmen while designing St. Peter’s. “I have come to the conclusion,” says Baron von Geymüller, “that the number of these pioneers may be reduced to three, namely, Brunellesco, Alberti, and Bramante. . . . A part of Brunellesco continues in Alberti; and though sometimes Bramante goes back to Brunellesco, it is Alberti principally who inspires a part of Bramante’s compositions.”

Alberti (? 1404–1484) wrote in what is now a dead language. In his time, and for a century after, Latin was read and understood, not only by scholars both cleric and laic, but also by the polite world; and it may be fairly assumed that Philibert de L’Orme, who was “Conseiller et Ausmonier ordinaire” of King Henri II., as well as “Abbé de Sainct-Eloy-lez-Noyon et de Sainct-Serge-lez-Angiers,” had studied the work of Alberti, with that of Vitruvius, in the original. In any case he lived for some twenty years after both had been rendered into French, and published in Paris; while his writings prove his acquaintance with those of the Florentine, his solid works of construction, his inventions, show that he had also studied the Roman author. Quatremère de Quincy attributed the renewal of “good taste” in architecture to Alberti, whom he placed in the foremost rank of those who contributed to the revival of the Arts; and he defined the position of Philibert de L’Orme as the first who introduced that taste into France. Perhaps some one—it is nearly seventy years ago, little more than a generation removed from the reign of Queen Guillotine—may have spoken ill of the Renaissance, when, as Mr. Ruskin wrote in 1853, “half the intellect of the age was absorbed in the base sciences of grammar, logic, and rhetoric: studies utterly unworthy of the serious labour of men, and necessarily rendering those employed upon them incapable of high thoughts or noble emotion.” Perhaps the Secrétaire Perpétuel of the Académie des Beaux-Arts may have felt that architectural learning required support against the rough shafts of master-masons and artificers who, in the fifteenth century and earlier, reared barbarous edifices in the flamboyant and ogival styles. It was even an innovation, on Quatremère de Quincy’s part, to go so far back as the first half of the sixteenth century for a French architect, the genus having only come into academic existence in the seventeenth. Voltaire consistently omitted to praise the pioneers of classical art under François I. and Henri II., and under Catherine de’ Medici. He contented himself, in the *Siècle de Louis Quatorze*, with a reference to the very great architects of the time of Marie de’ Medici, who built the Luxembourg “in the Tuscan taste, to honour,” he added, “her own country and embellish ours.” But Voltaire—whose respect for the first learned translator of Vitruvius, Claude Perrault, the physician whom Boileau “osa vouloir rendre ridicule,” is made memorable by those words—had probably never heard of Philibert de L’Orme’s literary works. True, he did say that François encouraged, in the erection of his public monuments, some savants, but that they were *only* savants; and that the King had some architects who were neither Michelangelos nor Palladios. But his words prove him to have been blind, and most excusably blind, to the beauties of the Châteaux of the Loire and of a host of similar edifices then erect in France.

The edition (So. Paris, 1512) of *De Re Ædificatoria* in the Library is bound up with the *Opus Historiæ* of Paulus Orosius, printed in Paris in 1517. The volume was presented by the late Charles Texier, an Honorary Correspondent, who, during the Presidentship of Donaldson (1863–65), was in constant communication with the Institute; and who, in 1867, received the



Royal Gold Medal. The characteristic letter to Donaldson, with which Texier accompanied his donation, preserved in the book itself, is worded thus :—

Londres le 4 juillet 1863.

MONSIEUR LE PRÉSIDENT,—J'ai l'honneur de faire hommage à l'Institut, pour être déposé dans sa Bibliothèque, d'un ouvrage qui pourra intéresser nos collègues : c'est l'Edition princeps du *Traité de l'Architecture* par Léon Baptiste Alberti, imprimée en 1517,\* suivie de l'histoire universelle de Paul Orose en sept livres. Un passage de cet auteur [Paulus Orosius] qui n'a pas été assez remarqué prouve que les anciens étaient mieux renseignés sur le cours du Nil que nous ne le croyons généralement. Voici ce passage qu'il est curieux de comparer avec la Carte dressée par les intrépides voyageurs auxquels on doit la connaissance exacte de cette source :—"Liber primus, folio iii. . . . Fluviumque Nilus qui de "litore incipientis maris rubri videtur emergere in loco qui dicitur Mosylon : deinde diu ad occasum "profluens faciens insulam Meröen in medio sui : novissime ad septentrionem inflexus tempestivisque "unctus incrementis plana Ægypti rigat. Hunc aliqui auctores ferunt haud procul ab Atlante habere "fontem et continuo harenis mergi : inde *interjeeto brevi spacio vastissimo lacu* exundare, &c." Ce passage comparé à la Carte dressée par MM. Grant et Speke ne manque pas d'exactitude ; il avait jusqu'à ce jour été regardé comme une fiction de l'auteur.

Agréez, Monsieur le Président, l'hommage de mes sentimens respectueux et dévoués.

CHARLES TEXIER.

The earliest French translation of Vitruvius is a folio published in Paris in 1547, the work of Jean Martin, who was Cardinal Lenoncourt's secretary in the time of Henri II., and who states "to the reader" that he translated Vitruvius for workmen and others who did not understand Latin. Numerous editions of the Roman author, in the original Latin, were published in France before Philibert de L'Orme's own works appeared in print : for instance, at Lyon, Philibert de L'Orme's own city, in 1523 and 1552 ; at Strassburg in 1543 and 1550 ; at Paris in 1545. But, in the fifteenth and sixteenth centuries, it was not necessary for a master's literary treatises to be printed and published in order to be known—at least to his immediate followers and pupils. Collections of MSS. were then transmitted from father to son, from master to apprentice. By such means the so-called secrets of Art were confined to families of artists, bequeathed and inherited from generation to generation in the same family. Witness that of the Du Cerceau, as described by Baron von Geymüller. The manuscript of *De Re Edificatoria*, which was not published, even in the original, until after Alberti's death, had been probably studied by his pupils during their master's lifetime. Jean Martin's translation of it into French, entitled *L'Architecture et Art de bien bastir du Seigneur Léon Baptiste Albert, Gentilhomme Florentin, divisée en dix livres*, is a folio published in Paris in 1553, after the death of the translator, and some sixty years at least after Alberti's death. The Library copy, which was purchased last year from a Parisian bookseller, happens to bear the name of Chenavard, a distinguished architect of Lyon, and an Honorary Correspondent, who died a few years ago.

Vitruvius appeared quaint even to an architect-scholar like Alberti, who grieved that the great and noble instructions of ancient authors should have been lost by the injury of time. Scarcely any had escaped the general wreck but Vitruvius, who wrote, says Alberti, what must have seemed Greek to the Latins, and to the Greeks Latin. Yet it was plain, he continues, that Vitruvius wrote neither Greek nor Latin, and that he might almost as well have never written at all, since no one could understand him. And Alberti, as if to show that he would not be beholden to an illiterate like Vitruvius, nor even to Pliny and Varro, whom he quotes in his third Book (ch. 16), declares that he has learnt much more from the existing edifices of the ancients than from their writings. He gives an instance of his habit

\* Texier has confused the date of Paulus Orosius's work, viz. 8th August 1517, with that of Alberti's, which is 23rd August 1512—both being under one cover in the copy he presented.

of observation in his fifth Book (ch. 12), when discoursing of ships, with which the danger incorporate and innate, he says, arises either from the design or from the timbers, adding—“I have observed by means of Trajan’s ship, which while I was writing this treatise was dug up out of the Lake of Nemi, where it had lain under water above 1,300 years, that the Pine and Cypress wood which was in it had remained surprizingly sound. It was covered on the outside with double planks, done over with Greek pitch, to which stuck a coat of linenn cloth, and that again was plated over with sheets of lead fastened on with brass nails.”\* There was not, he says in his sixth Book (ch. 1), the least remnant of any ancient structure that had any merit in it but what he examined, to see if anything was to be learnt from it; thus he was continually searching, considering, measuring, and making drawings.

Alberti laughs at the Vitruvian conception of an architect. To expect him to be a profound lawyer in order to know the rights and wrongs of conveying water, or of easements, or of party-walls and boundaries, seems to Alberti absurd; but drawing and mathematics, in his opinion, are as necessary to an architect as a knowledge of feet and syllables is to a poet. He would have an architect always appear to consult convenience in the first place, even though at the same time his principal care is ornament; and would not allow him to be so far carried away by the desire of glory as to rashly attempt anything new or unusual. The “base science of logic” held such possession of Alberti that he could not avoid blaming a man who, without being forced to it by necessity, drew a wall crooked and askew, devoid of rule or method: a mark of confusion, absurdity, and adventure. He dismisses an opinion which would seem to have been expressed even in his time, that the form of structures should vary according to every man’s particular taste or fancy, and not be tied down by rules of art; and he sums up with the authoritative expression of opinion (Bk. VI. ch. 2) that all arts were begotten by chance and observation, nursed by use and experience, improved and perfected by reason and study. Although he deprecated the fashion of those in his time who, when they erected a new building, followed the whims of the moderns, instead of seeking direction from ancient and nobler works, he would not commend the age, about two hundred years earlier—the thirteenth century—when people seemed, he says, to have been infected with a kind of general craving to build lofty watch-towers. Hardly a common householder, he exclaims, even in the meanest villages, then thought he could live without a turret. Towers and battlements, he urges†—and here the base science creeps in just as it does now among

\* Leoni’s translation, p. 91. See Library Catalogue, *Architecture, Painting, and Statuary; translated into Italian by C. Bartoli; and into English by J. Leoni*. 3 vols. 8vo. Lond. 1726. See, also, Mr. Tavenor Perry’s account of recent discoveries at Nemi, in the JOURNAL, pp. 77–81.

† Alberti is not opposed to the erection of towers in their proper place and for a definite object. On the contrary he gives his conception of what they should be composed as follows:—

“But whoever would erect a tower best fitted for resisting the injuries of age, and at the same time extremely delightful to behold, let him upon a square basis, raise a round superstructure, and over that another square one, and so on, making the work less and less by degrees, according to the proportions observed in Columns. I will here describe one which I think well worthy imitation. First from a square platform rises a basement in height one tenth part of the whole Structure, and in breadth one fourth part of that whole height. Against this basement, in the middle of each front stand two Columns, and one at each angle, distinguished by their several ornaments, in the same manner as we just now appointed for Sepulchres. Over this basement we raise

“a square superstructure like a little Chapel, in breadth twice the height of the basement, and as high as broad, against which, we may set three, four or five orders of Columns, in the same manner as in Temples. Over this, we make our Rotondas, which may even be three in number, and which from the similitude of the several shoots in a cane or rush, we shall call the joynts. The height of each of these joynts shall be equal to its breadth, with the addition of one twelfth part of that breadth, which twelfth part shall serve as a basement to each joynt. The breadth shall be taken from that square Chapel which we placed upon the first basement, in the following manner: dividing the front of that square Chapel into twelve parts, give eleven of those parts to the first joynt; then dividing the diameter of this first joynt into twelve parts, give eleven of them to the second joynt, and so make the third joynt a twelfth part narrower than the second, and thus the several joynts will have the beauty which the best ancient architects highly commended in Columns, namely, that the lower part of the shaft should be one fourth part thicker than the upper. Round these joynts we must raise Columns with their proper ornaments, in number not less than eight, nor more than six; Moreover, in each



living men—are altogether inconsistent with the peaceable aspect of a well-governed city. Nor does he approve of doors enriched with gold and ivory, or with statues, as described by historians and poets; so heavy that they cannot be opened without a multitude of hands, and such a noise as to terrify the hearers. Facility in opening and shutting a door was, to his mind, better than any weight of magnificence attached to it. Furthermore, he prefers detached pictures within a building to paintings upon the wall itself; statues to him are better than pictures, though he can look upon a good picture with no less pleasure than he reads a good history. He approves of inscriptions upon walls—precepts which serve to make men more modest, useful, and virtuous, such as, to quote him in translation, “Be what you would be thought,” “Love if you would be beloved,” and the like. Balconies in the front of a house are, in his opinion, beautiful; but he would never permit the erection, on a private house, of such a pediment as might rival the majesty of a temple.

It is difficult, after reading Alberti's *Art of Building*, to realise the fact that he died more than four hundred years ago. As Cicero is more modern in many of his thoughts and aspirations than the most enlightened of Mediæval scholars—at least those of Western Europe—so is Alberti a man of to-day when compared with Pugin, or even Viollet-Le-Duc. How often have his utterances been repeated within living memory! And they have been unconsciously repeated, in many instances, for the purpose of condemning the very style or method of architecture which the Florentine Vitruvius used his great powers to popularise and re-establish.

The Library possesses no complete edition of Serlio's literary works, as they appeared in the course of the sixteenth century. The copy of the folio edition published at Venice in 1551 wants the sixth and seventh Books, the latter being, it is well known, exceedingly rare. Another copy, which was formerly at Hamilton Palace, and is now in the possession of the present writer, contains not only the same five Books, but also the “extraordinary” Book of thirty doors (which ultimately became the sixth Book), bound up together in the original Venetian cover. It is fully described in the Appendix [pp. 156–157]. But the Institute is richly endowed with a curious copy of the complete quarto edition published at Venice in 1619, which was presented in 1849 by Mr. John J. Cole, then of Lambeth, a Fellow of the Institute and now retired from practice. His letter of presentation, addressed to Professor Donaldson, states that this copy of Serlio belonged to Inigo Jones; then to Webb, his pupil; then to a certain Churchill (perhaps the one associated with Wren at Chelsea); then to Sir James Thornhill; and at length to Peter Nicholson. Thornhill's signature is on the title page, and he is said to have written on the fly-leaf facing it, “This was Inigo Jones's “book, &c.” A further inscription, by a different hand, states: “This book is now the “property of P. Nicholson, 1813”—the author, it may be assumed, of the *Principles of Architecture* (1795–98), of the *Dictionary* (1819 and 1835), and of other well-known works. The book, moreover, is full of MS. notes, not unlike those on the celebrated copy of Vitruvius (4o. Venice, 1567) by Daniel Barbaro, in the possession of the Duke of Devonshire and now at

“joynt, as also in the square Chapel, we must open lights  
“in convenient places, and niches with the ornaments  
“suitable to them. The lights must not take up above  
“half the aperture between Column and Column. The  
“sixth story in this Tower, which rises from the third  
“Rotonda must be a square Structure, and its breadth and  
“height must not be allowed above two third parts of that  
“third Rotonda. Its ornament must be only square  
“Pilasters set against the Wall, with arches turned over  
“them, with their proper dress of capitals, architraves and  
“the like, and between pilaster and pilaster, half the  
“break may be left open for passage. The seventh and

“last story shall be a circular Portico of insulate Columns,  
“open for passage every way; the length of these Columns,  
“with their intabature, shall be equal to the diameter of  
“this Portico itself, and that diameter shall be three fourths  
“of the square building, on which it stands. This circular  
“Portico shall be covered with a Cupola. Upon the angles  
“of the square stories in these Towers we should set  
“Acroteria equal in height to the architrave, freze and  
“cornice which are beneath them. In the lowermost  
“square story, placed just above the basement, the open  
“area within may be five eighths of the outward breadth.”  
Bk. VIII. ch. 5 (Leoni's translation).

Chatsworth. Mr. Cole's kind thought that the book "should find a resting place at the "Institute" ought to be properly appreciated.

Serlio's literary and graphic performances are eminently practical. Like Alberti, he abuses Vitruvius because the latter's instructions do not always agree with some of the antiquities he has examined. In his fourth Book (Edition 1611, translated out of Dutch into English), which is entitled, "Rules for Masonry, or Building with Stone or Bricke, made after the five maners or orders of Building . . . : and thereunto are added examples of "Antiquities; which for the most part, agree with the instructions of Vitruvius: with some "Figures more, added unto them, which were not in the first, and some devices of the "Author, &c.," Serlio suggests methods, and devises means of using "old materials." These serve to show not so much the evolution of design as the manner in which it was influenced by the wealth of examples—in theatrical phraseology, "properties"—at the disposal of architects, artists or workmen, painters and sculptors, in his time. Take, for instance, the following advice, which might have caused a shudder among the sensitive members of a Society for the Protection of Antiquities if any had existed in the sixteenth century:—"Sometime, as is said, a workman shall find a great number of Columnes, but so low, that "they will not reach high enough for his worke, if he cannot helpe himselfe therewith, and "apply such members, to serve the building which he hath in hand: therefore if the height "of the Gallery [veranda, colonnade, or open ground-storey] riseth higher then the Columnes, "then in the middle of the Facie (*faccia*) you may make an Arch, being upholden by the "Architrave, which shall bee above the Columnes, which Architrave shall be the Impost or "upholding of a round roofe (fo. 42)." He then proceeds to state that this "round roofe" is to be groined, and that metal rods are to be inserted in the middle of the columns at their top, and that chains are to be fixed on them and carried to the solid wall behind—giving plans and elevations of two or three examples of the kind.

In his second Book Serlio is a little magniloquent, for he will not trouble himself to discuss what "Perspective" is. He hints, as it were, that the profound Euclid (*il profundissimo Euclide*) writes darkly of the speculation thereof. Although he is fond of rushing into the practical part of his subject, he indulges here in a kind of aside, at the end of his Introduction, to the effect that Perspective is most necessary to an architect, now that good architecture has begun to appear. Both Bramante and Raphael, he says, had great skill in perspective before they became architects. So had "Peruzzi of Siena, also a painter, and so well seen "in perspective art that he, seeking to place certain pillars and other antique works "spectively, took such a pleasure in the proportions and measures thereof that he became "an architect, wherein he so much excelled that his like was almost not to be found."

Serlio's third Book, dedicated to the Most Christian King François, possesses literary value and great artistic merit. In the dedication he alludes to Nîmes, Arles, and other towns of Provence, but he does not illustrate them. He gives plans, elevations, and details of ancient buildings more or less perfect in his time, such as the Colosseum, the Temples, Arches, and Baths of Rome. His opinions of the monuments he illustrates have an interest for architects to-day, especially the description he gives of the Pantheon, which he considers—and he is writing in the middle of the sixteenth century—the finest, the most complete, and the best to be understood, among all the ancient buildings in Rome. Serlio therefore placed it first in the chapter on Antiquities (*De le Antiquita*, ch. 4), as his translator has it—"For that "the Pantheon seemeth unto me to be the perfectest peece of worke that ever I saw, therefore "I thought it good to set it first in the beginning of this Booke, and for a principall head of all "other peeces of worke." Among the numerous illustrations which follow he gives Bramante's design for the dome of St. Peter's, accompanied with plans of the fabric.



Philibert de L'Orme, in the first Book of his *L'Architecture*, says of Serlio that the Italian immigrant was the first to give the French cognisance of ancient Roman edifices, and of many very beautiful inventions. De L'Orme praises his Italian confrère for having published, "de bon cœur," what he had measured, studied, and "retiré des antiquités." Alberti and Serlio are the two Italians whom Philibert de L'Orme most respects; and, although he writes of "Pallade et autres," it may be questioned if he knew his more famous contemporary. Yet Palladio has the first place in Quatremère de Quincy's second volume, while Serlio and Androuet du Cerceau are relegated to an Appendix, the career of each being there treated in a single paragraph. De Quincy, emulating, perhaps, what Philibert de L'Orme said of Serlio, that the last named was the first who introduced a taste for good architecture into France, transferred the compliment to his countryman, who, in the Academician's opinion, completely distanced the greater number of his rivals. But his bias, due to the period in which he lived and the literary atmosphere breathed within the Palais de l'Institut, is easily understood. For it must not be forgotten that the men who, in the fifteenth and sixteenth centuries, became, or have left a reputation for having been, great architects were originally "artists" in the modern sense of a term which, even as late as the period of the Renaissance, served to denote a workman. Painters, sculptors, decorators, draughtsmen, who had received no technical or practical training in the Art of Building, took the place of Chief Workman, and were dubbed architects. A century earlier, the master-of-the-work was a foreman of artificers, and to all intents and purposes a workman who executed buildings according to traditional methods, exactly as the Persian and Indian still undertake similar work. Hence Quatremère de Quincy's slight regard for du Cerceau, a "faiseur de desseings," and his preference for *littérateurs* like Alberti and Philibert de L'Orme. The latter, it must be admitted, although he attempts to hold the balance fairly between the two extremes, has always been of opinion, he says (Bk. I. ch. 8), that it would be more worthy of the architect not to know how to make ornaments, or enrichments of walls, and such things; far better that he should understand what is necessary for the health and preservation of persons and the protection of their goods, adding that just the contrary was practised. Many who profess to build and pretend to be architects and foremen of works do not lay themselves out for that, perhaps because they do not understand it; what is worse, he continues, the attention of the Seigneurs who build—in later phraseology the employers—is sometimes more arrested by fine ornaments, enriched with pilasters, columns, cornices, mouldings, friezes, marble incrustations, and the like, than by the situation and the character of their habitations. His further words of counsel, in the same chapter, shall be given in the original, though with modern spelling:—

Pour ce je conseille à l'architecte, et à tous qui font profession de bâtir, qu'ils s'étudient plutôt à connaître la nature des lieux, qu'à faire de tant beaux ornements, qui le plus souvent ne servent que de filets à prendre les hommes, ou ce qui est dans leurs bourses. Véritablement il est trop plus honnête et utile de savoir bien dresser un logis et le rendre sain, que d'y faire tant de mirelifiques, sans aucune raison, proportions, ou mesures, et le plus du temps à l'aventure sans pouvoir dire pourquoi. Combien que je confesse qu'il faut savoir l'un et l'autre, et mettre chacune chose par bon ordre et ornement, ainsi qu'on la demande, afin de rendre les habitations saines et belles. Je ne dis point toutefois ceci pour empêcher ou vouloir conseiller que l'on ne fasse les bâtiments à la volonté des Seigneurs qui les commandent, car il est raisonnable qu'ils soient servis comme ils le veulent et leur plaît.

Again, in the tenth chapter of the same Book, he breaks out against the draughtsman and the picture-maker:—

De sorte que tous les jours se voient plusieurs donneurs de portraits et faiseurs de dessins, dont la plupart n'en sauraient bien tracer ou décrire aucun, si ce n'est par l'aide et moyen des peintres, qui les savent plutôt bien farder, laver, ombrager, et colorier, que bien faire et ordonner avec toutes leurs

mesures. . . . Je suis donc d'avis que nous suivions les bonnes coutumes de ceux qui voulaient anciennement bien édifier, et ne s'arrêtaient, comme écrit Léon Baptiste Albert, aux portraits de plates peintures ou autres. . . . Je ne dis pas que ce ne soit une fort belle grace à l'architecte de savoir bien peindre et peindre, *mais il a tant d'autres choses beaucoup plus nécessaires à connaître* qu'il lui doit suffire de peindre médiocrement, proprement et nettement.

He does not hesitate to add that all those who have amused themselves with making fine drawings have the least understood Art, meaning, obviously, the Art of Building, which is Architecture. It is sufficient, in his opinion, for an architect to know how to draw a plan and an elevation neatly, with correct proportions and measurements; and he is in favour of good models, because by their aid it is easier to get at the cost of a projected building. Nevertheless, in spite of all his previous denunciation of the draughtsman, he gives expression only a little later to the phrase, rendered famous by repeated quotation, that in many parts of the country the cart is put before the horse; that the master-masons in many places guide and teach the architects, or, to use the original words, "aujourd'hui, en plusieurs pays, la charrette (comme l'on dit) conduit les bœufs: c'est-à-dire, les maçons en plusieurs lieux gouvernent et enseignent les maîtres" (Bk. III. ch. 16). He is a strong advocate, therefore, for education, and describes what, in his opinion, it is essential for an architect and a master-mason to know, adding that he would go more fully into the subject were it not that there existed schools in France, and many who made a profession of teaching architectural matters. Moreover, he says, we have books, not in Latin alone, but in French, Italian, and other languages, which treat learnedly and familiarly of such things.

Philibert de L'Orme's description of the great buildings he had seen in Rome (Bk. V., Prologue), his versions of their history, his references to Pliny and Herodotus, and also to the Temple of Jupiter Olympius at Athens, are immensely interesting, though obviously of slight value at the present day. His account of a certain Lord Cardinal, who took him into favour from having seen him at work on the ancient edifices of the Eternal City, is well known. His description (Bk. V. ch. 27) of the origin of the Ionic volute has for the moment a special interest, for he maintains that the idea of it was derived from the bands and curls (*trousses et entortillements*) of ladies' hair, as they still wore it, in some places, he adds, in his time; and of course he is appropriating the dictum of Vitruvius in regard to the supposed origin. Oddly enough, in his seventh Book (ch. 10), he counsels apprentices to acquire subtlety and delicacy of hand in order to portray the ornaments of antiquity—specimens of which, sculptured in antique marble, he describes—urging them to learn and understand "la portraicture pour désigner les bastiments, faire ornements et feuillages, quelquefois requis et nécessaires." He begs them to take note that it is necessary, not only to be able to portray foliage for friezes, but to accompany it with fruits, small animals, birds, and similar things; and he says this without prejudice to the paragraphs of his first Book denunciatory of picture-makers and "faiseurs de desseings." Seldom tired, moreover, of telling complacent readers about his inventions, and particularly his "French column," which may be seen on the river-front of the Louvre, he begins the thirteenth chapter of his seventh Book with a question that, since his time, many an earnest student in many a country has doubtless asked himself more than once. It has been permitted, says De L'Orme, to ancient architects of divers nations, to invent new columns such as those of the Greeks and the Romans; why, then, shall we French be prevented from doing likewise and calling our inventions French? His column was Doric, constructed of several short shafts, held together by sculptured bands, and so he urges upon architects of "bon esprit" to use other Orders and vary them, always taking care to keep to the ancient proportions. He quite unconsciously ignores the fact that his so-called inventions—like Serlio's, described on a previous page—were



all based, more or less, on Mediaeval methods of design and construction, to which he and his contemporary imparted a classical form.

The *editio princeps* of "Le Premier Tome de l'Architecture de Philibert de L'Orme," published with illustrations in Paris in 1568, is dedicated to Catherine de' Medici, Queen of France and mother of Charles IX. The copy in the Library was presented by Guenepin, Member of the Institut de France, and an Honorary Correspondent of the Institute. It bears

an inscription from his hand that the book is offered to the members "par leur très-dévoué confrère." This first edition consists of nine Books, and a "Conclusion" illustrated with figures of the foolish and the wise architect, to be described hereafter. The Library is not equally favoured in regard to the first or indeed any early edition of the works of Jacques Androuet du Cerceau, to whom probably his better-read countryman, De L'Orme, more than once refers in the latter's attacks on the makers of "portraits" and drawings. With the sole exception of the first edition of the *Livre des édifices antiques Romains*, published a year before its author's death, and an edition of *Des plus excellents Bastiments de France* (1576-1607), it has no copy of any one of the innumerable works, mainly engravings with descriptive letterpress, he produced during the sixteenth century. What these were can best be seen in Baron von Geymüller's monograph, *Les du Cerceau*—a splendid record of the great draughtsman of



FIG. 1. THE HASTY AND IMPROVIDENT ARCHITECT.

the French Renaissance and his family. That he was an artist rather than a literary man explains the scanty references here made to him; but that he was a pioneer of French architectural literature, and that his influence in the creation of style and taste among his countrymen of the sixteenth century was second to none, cannot be doubted for a moment.

Philibert de L'Orme, who had intended to complete his first "Tome et volume "d'Architecture" in eight Books, was constrained to write a ninth if only to introduce the subject of fireplaces, with illustrations, followed by designs for chimney shafts; and he closes the



prologue of his ninth Book with an apology, which, when Englished literally, has a sixteenth-century flavour by no means unfamiliar. Take the following:—"Forasmuch as the matter  
 " of Architecture is of itself sufficiently hindering and difficult, I have been constrained to  
 " write more prolixly than briefly: joined also [to the fact] that brevity has commonly for  
 " companion, obscurity: wherefore Horace said well, *Brevis esse laboro, obscurus fio*: that is to  
 " say, When I force myself to be brief, I become obscure and difficult. I will add from Quin-

tilian that, *Prima virtus  
 " orationis est perspicuitas*:  
 " The first virtue of an ora-  
 " tion, harangue, or discourse,  
 " is perspicuity and facility."

He had previously, in the same prologue, twice quoted from Cicero passages which, like those from Horace and Quintilian, are now hackneyed enough; but their application to writings on architecture was novel in the days of Philibert de L'Orme. That, in the Rouen edition of 1648, his nine Books are followed by a tenth and an eleventh may be accounted for by a desire of the Editor to include both of De L'Orme's treatises under one cover, seeing that the first half of this addition is termed "Le premier et dixiesme livre des Œuvres et Nouvelles Inventions pour bien bastir et à petits frais." It was the "Conclusion" that always brightened the wit of William Burges when he happened to come upon it, or to think about Philibert de L'Orme and his works. To Burges the graphic arts of the Renaissance were as base as those of grammar, logic, and rhetoric to Mr. Ruskin; and De L'Orme's conception of the good and the bad architect was a prolific source of amusement to one who tried, and very learnedly tried, to resuscitate Mediæval forms and methods. Having described a bad workshop, bad plant, plenty of men and labourers who were most of them faithless, De L'Orme adds: Verily, such resemble the figure of a man, dressed like a sage, always very hot and hasty, and running as if with great trouble, while in his path are dried ox-skulls and big, loose stones, over which he is compelled to jump, with branches of trees by which he is caught and his garment torn [fig. 1]. The man has no hands,

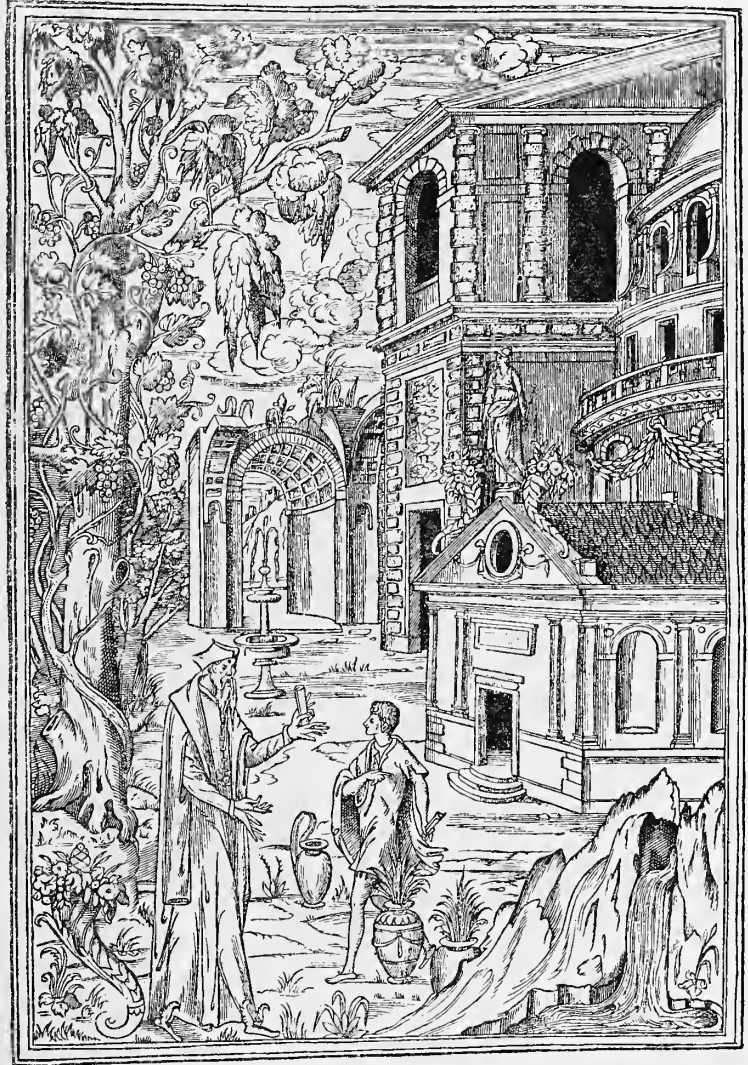


FIG. 2.—THE ARCHITECT-SAGE.

Mr. Ruskin; and De L'Orme's conception of the good and the bad architect was a prolific source of amusement to one who tried, and very learnedly tried, to resuscitate Mediæval forms and methods. Having described a bad workshop, bad plant, plenty of men and labourers who were most of them faithless, De L'Orme adds: Verily, such resemble the figure of a man, dressed like a sage, always very hot and hasty, and running as if with great trouble, while in his path are dried ox-skulls and big, loose stones, over which he is compelled to jump, with branches of trees by which he is caught and his garment torn [fig. 1]. The man has no hands,



which serves to show that those he represents would not know how to handle anything. He has no eyes to see and take cognisance of *les bonnes entreprises*; nor ears to hear and understand *les Sages*; nor hardly a nose to have a *sentiment* of good things. Brief, he has only a mouth with which to babble and slander, and a sage's cap and gown to counterfeit a great Doctor.

On the other hand, Philibert de L'Orme shows the reverse of the medal he has just held up, counselling architects to force themselves into becoming "gens de bien." This personage he represents in a drawing—a veritably wise man, a Sage erect in a garden before a Temple of Prayer [fig. 2]. The sage has three eyes: one to admire and adore the holy divinity of God, to contemplate His admirable works, to take note of the time and things past; another to observe the present time, so as to order and direct whatever presents itself; the third to foresee the future and prepare for the time to come. He has four ears, showing that he must listen rather than speak, for knowledge of the arts and sciences is obtained by morsels, *Savoir* being nought else than an apprenticeship without end. He has four hands—the architect-sage—to show that he must do and handle many things in his time if he would arrive at a mastery of the sciences requisite to him. Moreover, he holds in his hands a "memoire et instruction" to teach those who may desire to know—his diligence and sedulousness being represented by the wings at his feet. Nor will he conceal from students his treasures of virtue, his cornucopias full of fair fruit, his vases plenished with great riches and secrets, his brooks and fountains of science, his fine trees, vines, and plants which flourish and bear fruit at all times. The illustration depicts further the beginnings of more than one noble building, in a classical garb; and a grown-up apprentice, who respects his master and is wishful to learn. So much for the industrious apprentice of nearly four hundred years ago, and for the Sage, his master. Philibert de L'Orme fears, in his last paragraph, that he has been too prolix in his explanation of the preceding figures [1 and 2], and so puts an end to his present work, supplicating its readers very humbly and affectionately to take the whole in good part. If they will do this he will soon bring to light his "second Tome et volume" of *Architecture*, accompanied with "discours fort exquis et singuliers," adding—"Ce que je feray de bon cuer, moyennant la grâce de Dieu qui jusques icy nous a conduits et dirigéz, parquoy à luy seul en soit honneur et gloire."

**BIBLIOGRAPHY.**—The titles of some of the more important books, which presumably influenced the men of the French Renaissance, and its developments, are given in the following List:—

**Vitruvius Pollio (Marcus)**—

- The *Editio princeps* of Sulpitius. fo. Rome 1484  
 \* *Raison d'Architecture antique*, extraite de Vitruve et aultres anciens architecteurs, nouvellement traduit d'espagnol en françoys, à l'utilité de ceux qui se délectent en édifices. Paris 1539  
 \* Another edition. Paris 1542  
 \* Another edition. Strassburg 1543  
 In decem libros M. Vitruvii Pollionis de Architectura Annotationes G. Philandri. So. Rome 1544  
 Another edition. So. Paris 1545  
*Architecture, ou Art de bien bastir*, de Marc Vitruve Pollion Autheur romain antique mis de Latin en françoys, par Ian Martin, Secrétaire de Monseigneur le Cardinal de Lenoncourt. [The illustrations by Jean Goujon, with that artist's annotations on *Geometry and Perspective*.] fo. Paris 1547  
 Another edition. fo. Paris 1572  
*Epitome ou extrait abrégé des dix livres d'architecture de Marc Vitruve Pollion*; enrichi des figures et pourtraits pour l'intelligence du livre; par J. Gardet et D. Bertin. fo. Paris 1565  
 De architectura libri decem ad Cæs. Augustum, omnibus

omnium editionibus longè emendatiores, collatis veteribus exemplis. Accesserunt G. Philandri annotationes castigatiores, et plus tertia parte locupletiores. Adiecta est epitome in omnes G. Agricolæ de mensuris & ponderibus libros eodem auctore. Cum Græco pariter et Latino indice locupletissimo. 4o. Lyon 1586

**Alberti (Leone Battista)**—

- \* De Re .Edificatoria (Libri X.) (?) fo. Florence 1485  
 Leonis Baptistæ Alberti Florētini viri clarissimi Libri De re ædificatoria decē. Opus integrū et absolutū: diligenterq. recognitum. 8o. Paris 1512  
 L'Architecture et Art de bien bastir . . . divisée en dix livres, Traduits de Latin en François, par deffunct Ian Martin, Parisien, naguères Secrétaire du Reverendissime Cardinal de Lenoncourt. fo. Paris 1553

**Serlio (Sebastiano)**—

- \* Il primo (e secondo) libro d'Architettura. Le I (et II) livre d'Architecture mise en langue françoise par Ian Martin (en Italien et en François). fo. Paris 1545  
 \* *Règles générales de l'architecture*, sur les cinq manières d'édifices, avec les exemples d'antiquités, selon la méthode de Vitruve. Antwerp 1545

Architettura. [5 Books.] fo. Venice 1551

\* Il primo libro d'Architettura di M. Sabastiano Serlio Bolognese (Primo libro de Geometria). \* Il secondo libro di Perspettiva. fo. Venice [no date]

\* Il terzo libro di S. S. Bolognese, nelqual si figurano, e descrivono le antiquita di Roma, e le altre che sono in Italia, e fuori d'Italia. fo. Venice 1551

\* Regole Generali di Architettura di S. S. Bolognese, sopra le cinque maniere de gli edifici, cioe, Thoscane, Dorico, Ionico, Corinthio, e Composito, con gli essempli de l'antiquita, che per la maggior parte concordano con la dottrina di Vitruvio (Libro quarto). fo. Venice 1551

\* Quinto libro d'Architettura di S. S. Bolognese, nel quale si tratta di diverse forme de Tempj sacri secondo il costume Christiano, & al modo antico. fo. Venice 1551

\* Extraordinario libro di Architettura di S. S. Architetto del Re Christianissimo [Henri II. of France]. Nel quale si dimostrano trenta porte di opera rustica mista con diversi ordini: et venti di opera delicata di diverse specie con la scrittura davanti, che narra il tutto. [Sixth Book.] fo. Venice 1558

[The six Books of this early Venice edition are bound up under one cover; and were originally in the Hamilton Palace Collection.]

\* Le troisième Livre de S. S., traduit d'Italien en françois. Antwerp 1550.

\* Livre extraordinaire d'Architecture de S. S., architecte du Roy très chrétien. Lyon 1551.

\* Tutte l'Opere d'Architettura di Sabastiano Serlio Bolognese; doue si trattano in disegno di quelle cose, che sono più necessarie all'architetto; et hora di nuovo aggiunto (oltre il libro delle porte) gran numero di case primarie nella Città & in Villa, et un Indice copiosissimo raccolto per via di Considerationi da M. Gio Domenico Scamozzi. fo. Venice 1584

Tutte l'Opere d'Architettura, et Prospetiva, di Sabastiano Serlio Bolognese, doue si mettono in disegno tutte le maniere di Edificj, e si trattano di quelle cose, che sono più necessarie a sapere gli Architetti. . . Diviso in sette libri. Con un' Indice copiosissimo con molte Considerationi, & un breve Discorso sopra questa materia, raccolto da M. Gio. Domenico Scamozzi Vicentino. fo. Venice 1619

### Orme (Philibert de L')

Nouvelles Inventions pour bien bastir et à petits fraiz. fo. Paris 1561

\* Second edition. 1568

\* Other editions. Paris 1576 & 1578

Le premier tome de l'Architecture. fo. Paris 1568

\* Second edition. fo. Paris 1576

\* Third edition. fo. Paris 1626

Oeuvres. fo. Rouen 1648

### Du Cerceau (Jacques Androuet)

\* Livre d'Architecture de Jacques Androuet du Cerceau, contenant les plans & dessaings de cinquante bastiments tous differens &c. [French and Latin]. fo. Paris 1559

\* Livre d'Architecture . . . auquel sont contenues diverses ordonnances de plans et élévations de bastiments pour seigneurs, gentilshommes & autres qui voudront bastir aux champs. fo. Paris 1572

Le premier volume des plus excellents Bastiments de France. Auquel sont designez les plans de quinze Bastiments, et de leur contenu: ensemble les elevations et singularitez d'un chascun. fo. Paris 1576

Le second volume des plus excellents Bastiments de France. fo. Paris 1607

[These two volumes are bound in one.]

\* Leçons de Perspective positive. 4o. Paris 1576

\* Petit Traité des cinq ordres de Colones. sm. fo. Paris 1583

Livre des édifices Romains, contenant les ordonnances et desseings des plus signalez et principaux bastiments qui se trouvaient à Rome du temps qu'elle estoit en sa plus grande fleur: partie desquels bastiments se void encor à present, le reste aiant esté ou du tout ou en partie ruiné. [First edition.] fo. Paris 1584.

Livre d'Architecture, . . . contenant les plans et dessaings de cinquante bastimens tous differens: pour instruire ceux qui desirent bastir, soit de petit, moyen, ou grand estat. Avec declaration des membres et commoditez, et nombres des toises que contient chacun bastiment, dont l'elevation des faces est figurée sur chacun plan. [Third edition.] fo. Paris 1611.

Livre d'Architecture. . . Auquel sont contenues diverses ordonnances de plants et élévations de bastiments pour Seigneurs, Gentilshommes, & autres qui voudront bastir aux champs: mesmes en aucuns d'iceux sont desseignez les basses courts, avec leurs commoditez particulieres: aussi les jardinages et vergiers. [Third edition.] fo. Paris 1615.

[These three volumes, 1584, 1611, and 1615, are bound in one, the earliest and rarest (that of the édifices Romains) being placed at the end.]

### Boillot (Joseph)—

\* Nouveaux Pourtraitz et Figures de Termes, pour user en l'Architecture. Langres 1592

### Bullant (Jean)—

\* Reigle générale d'Architecture des cinq Manières de colonnes, à sçavoir: Tuscanne, Dorique, Ionique, Corinthie et Composite, à l'exemple de l'antique, suivant les reigles et doctrines de Vitruve. Ecouen and Paris 1564

\* Petit Traicté de Géométrie et d'Horlogiographie pratique. Paris 1564

### Cousin (Jehan)—

\* Livre de Perspective. Paris 1560

### Sambin (Hugues)—

\* Oeuvre de la diversité des Termes dont on use en Architecture, réduit en ordre. Lyon 1572

The foregoing list is obviously most imperfect, but it may answer the purpose for which it is mainly intended, namely, to show what printed books, Latin and French, were available to Philibert de L'Orme, Androuet du Cerceau, and such of their countrymen as were contemporaries, during the middle and the greater part of the latter half of the sixteenth century. Numerous editions of Vitruvius, in the original Latin, which appeared at that time, in Italy, France, Holland, and elsewhere, are not mentioned; and in the case of the principal works of Alberti and Serlio, only a few extra editions are referred to. For a more complete list, members may consult Leoni's translation of Alberti's "Architecture" (Vol. I., at the end of "The Life"); Callet's *Notice historique sur . . . les ouvrages de quelques Architectes Français du seizième siècle* (2nd ed. pp. 14, 42, 62, and 98); Destailleur's *Notices sur quelques Artistes Français . . . du XVI<sup>e</sup> au XVII<sup>e</sup> siècle*; Baron H. von Geymüller's *Les du Cerceau, leur vie et leur œuvre*, pp. 285-326; and others.







9, CONDUIT STREET, LONDON, W., 2 January 1896.

## CHRONICLE.

### THE STUDENTSHIPS AND PRIZES.

#### The Award and Presentation.

At the Business General Meeting of Monday, the 13th inst., the Council will announce the award of the several Institute Silver Medals, the Travelling Studentships, and the Grissell Prize, by deed under the Common Seal, in accordance with precedent. A communication respecting the Ashpitel Prize will be made at the same time. The public presentation of the same will take place on Monday, the 20th inst., when an Address to Students will be delivered from the Chair, and a critical review of the works submitted, prepared by a Sub-Committee of the Art Standing Committee, will be offered to the General Meeting. The President, in consequence of his probable departure from England this month, has been obliged to deny himself the pleasure of presenting the Prizes and delivering the usual Annual Address on the occasion.

#### Works submitted by Candidates and Competitors.

A full list of the names of candidates for the Studentships, and of competitors for the various Medals and Prizes offered by the Institute for 1895-96, is given in the *Supplement* issued with to-day's JOURNAL. Eight Essays and four sets of Drawings are sent in for the two Silver Medals. Seventeen designs for an "Institute of Architects" are submitted for the Soane Medallion. There are six candidates for the Pugin Travelling Studentship, four for the Godwin Bursary, and three for the Owen Jones Studentship. Ten designs for a Stone Bridge, in competition for the Tite Prize, and nine for a Polygonal or Circular Band-stand, in competition for the Grissell Prize, have been received. A new feature of the award to be made this year is the Aldwinckle Studentship, which carries with it a Certificate and the sum of £50. This Studentship, which is the gift of Mr. T. W. Aldwinckle [F.], is to be awarded to the person who, among all those submitting works for the Prizes and Studentships 1895-96, will, in the Council's opinion, best carry out the donor's intentions. The Holder of the Studentship will

have to travel for not less than eight weeks in Spain, for the purpose of study, including the preparation of measured drawings and sketches.

### THE ROYAL GOLD MEDAL 1896.

#### Notice to members of the Institute.

The Council will, on Monday, the 3rd prox., announce to the General Meeting the name of the person they propose to submit to Her Majesty the Queen, as a fit recipient of the Royal Gold Medal, this current year. Members of the Institute desiring to suggest names, for the consideration of the Council, should do so in writing to "The Secretary R.I.B.A.," prior to the 13th inst.

#### Sir Frederic Leighton, Bart., P.R.A. [Hon. F.]

The Queen has been pleased to decree that Her Majesty's loyal subjects—all of whom regard the present President of the Royal Academy with admiration for one or other of his many accomplishments—shall know him no more by the present title of Sir Frederic Leighton. In the list of New Year Honours his name appears first—a Peerage of the United Kingdom having been conferred upon him by the Sovereign. May he live long to enjoy the Queen's gift: to add brilliancy even to an Upper House which has never lacked that quality, and for the benefit of the Arts, of which he is the most thorough representative in the British Empire!

#### Researches in Cyprus.

The following communication has been received from Dr. Richter:—

Since I read my Paper on the 16th ult. a great many friends have asked for particulars of the explorations in Cyprus. Perhaps no one has conducted so many excavations and archaeological researches there as myself, first on behalf of the Berlin Museum, and then by direct commission of the German Emperor, who, out of his private purse, placed a considerable sum at my disposal.

If the British alone had been allowed to excavate, the number of genuine workers would not have been large enough to check underhand lawless plunder, and the maintenance of a great police force would have been too costly. Besides, an extension of the permission to excavate has been the means of bringing, without extra outlay, rich acquisitions to the Government of Cyprus and to the flourishing Cyprus Museum in Nicosia. For by the law as it at present stands, and as it should remain for good, one-third of the finds on private land and two-thirds on State land fall to the Cyprus Government, and must be delivered by the excavators to the Museum at Nicosia.

The Paper I read on the 6th ult. at the Ashmolean Museum in Oxford showed how useful and reasonable such arrangements are to all interested parties. The island is able to have a local and very valuable museum of its own, while excavators

receive their fair share of the finds. The most recent British excavations, which have been carried out by English archaeologists since the Cyprus Exploration Fund was formed, are a standing proof that the Cypriotes have every reason to acknowledge the justice and impartiality of British rule, and to be proud of the collection stored, by British and foreign money, in the Cyprus Museum. On the other hand, an inspection of the new acquisitions at the British Museum and the archaeological museums of Oxford and Cambridge must convince any impartial person that the English people have no less reason to be satisfied with their collections, the result of excavations conducted systematically on purely scientific principles. Cyprus is extremely rich in antiquities, and replicas occur again and again, so that there is plenty of room for workers of other countries as well; and whatever money may be raised in Great Britain for this purpose can be well spent on excavations in Cyprus for another century or more. Finds have changed considerably in archaeological matters. One wishes not only to get antiquities hitherto unknown, but in most cases one is anxious to discover where, how, and under what circumstances the antiquities were found, to enable the period to be fixed, and, if possible, the race, people, or tribe, to which they belonged. By doing so, the country is placed in the position to date and classify the antiquities in its museums, of whose antecedents it is now ignorant.

I have selected for the last German investigations the two ancient Cyprian kingdoms of Idalion and Tamassos. The collected results obtained there, with some additions from other parts of the island, are to be published shortly in a richly illustrated work entitled *Tamassos und Idalion*. For this book, too, His Majesty the German Emperor has allowed a considerable sum of money; and the work will be edited by myself, and contain valuable contributions by eminent scholars. In order to gain access to books of reference, to make a closer study of the Cyprian antiquities in the museums of the United Kingdom, and to collect other materials for the completion of this book, I thought it advisable to come to England. My wife, I may be permitted to add, has been appointed my official assistant by the Prussian Minister of Public Instruction, and it is due to her skill, energy, and successful co-operation that I was able in my Paper to lay before the Institute, in a perfection hitherto unattained, such an interesting mass of material.

#### The late Thomas Gildard.

Mr. William Simpson [*H.A.*], R.I., has forwarded for publication the following obituary notice:—

The death, on the 5th ult., has been announced of Mr. Thomas Gildard, a Glasgow architect of local repute, at the age of seventy-six. He was born at Luss, "on the bonnie, bonnie banks o'

"Loch Lomond," and commenced his architectural education in 1838 as an apprentice in the office of Messrs. David & James Hamilton in Glasgow. David Hamilton, it may be mentioned, was the architect for most of the principal buildings erected in Glasgow during the first half of the present century. His apprenticeship over, Gildard started in business with his brother-in-law under the style of Gildard & Macfarlane. Later he was engaged by Mr. Carrick, the City Architect, which brought him into the Office of Public Works in Glasgow, where he remained till his death. Mr. Gildard was intimate with most of the artistic and literary coteries of Glasgow during the past half-century, and he contributed many interesting notices of them to the literary columns of the daily press. These contributions included, among others, reminiscences of Alexander Smith, the poet; and Hugh Macdonald, whose *Rambles round Glasgow* and other works of a similar character are so well known to those who live in the city of St. Mungo. About a year ago Mr. Gildard read a Paper to the Philosophical Society of Glasgow, the subject of which was "An Old Glasgow Architect on some Older Ones," a contribution that is full of details about the architects of Glasgow and their works, dealing principally with the first half of this century. Many of the details are valuable, and would have been altogether lost but for this Paper.

#### Additions to the Library.

The Publisher of *The Builder* has forwarded *The "Builder Album" of Royal Academy Architecture*, 1895, a handsome volume comprising 87 admirably executed plates of drawings which were exhibited in the Architectural Room of last year's Royal Academy, and lent by their authors for illustration in *The Builder*. This volume equals in interest any of its predecessors, and surpasses them in its general get-up and in the quality of its illustrations.

*The British Almanac and Companion* for the New Year has been presented by Mr. R. Langton Cole [*A.*], who contributes the articles on the past year's architecture and engineering.

*Our Homes* [London: B. T. Batsford], presented by the author, Mr. R. Barry Parker, consists of a Paper reprinted from the *Building News* on the internal adornment of domestic buildings, with reproductions of pen-and-ink drawings of several artistically treated interiors.

*Domestic Metal-work*, received from Mr. Harry Sirr [*A.*], *Inst. Medallist* 1888, is a revised reprint, with illustrations, of a Paper read by him before the Discussion Section of the Architectural Association on the 6th February 1895.

A reprint from the JOURNAL [p. 561] of the essay "The Influence of Literature on Architecture," which won for the author the Institute Medal of 1895, has been received from Mr. A. T. Bolton [*A.*], *Soane Medallist* 1893. It contains



on pp. 3, 4, and 5 the historical argument which was omitted in the *JOURNAL*; and, as frontispiece, a photo-lithographic reproduction of the original drawing of the well-known Wispers, near Midhurst, Sussex.

*The Book of the Hotel Cecil*, containing several beautiful illustrations by Joseph Pennell, Sam Reid, R.W.S., and T. Raffles Davison, has been received from Mr. J. Tavenor Perry [A.], whose firm, Messrs. Perry & Reed, initiated the scheme for dealing with the Salisbury estate which the hotel now covers, and designed and superintended the erection and decoration of the whole structure.

The Boston Trustees have presented a Catalogue of the Books relating to Architecture, Construction, and Decoration in the Public Library of the City of Boston, U.S.A., in November 1894; and a Classed Catalogue of Printed Books on Ceramics in the National Art Library, South Kensington, has been purchased.

An acquisition of considerable interest is J. S. Buckingham's narrative of his travels and adventures in the East in the early part of the century, told in three volumes, two of which contain portraits of the author, one as an equestrian armed to the teeth, and arrayed in the turban and flowing robes of a Turco-Arabic potentate. The titles which follow give an idea of the contents of the volumes, and of the extent of ground covered by the intrepid traveller:—

Travels in Palestine, through the Countries of Bashan and Gilead, east of the river Jordan, including a visit to the Cities of Geraza and Gamala in the Decapolis. 4o. Lond. 1821.

Travels among the Arab Tribes inhabiting the Countries East of Syria and Palestine, including a journey from Nazareth to the Mountains beyond the Dead Sea, and from thence through the Plains of the Hauran to Bozra, Damascus, Tripoli, Lebanon, Baalbeck, and by the Valley of the Orontes to Seleucia, Antioch, and Aleppo. 4o. Lond. 1825.

Travels in Assyria, Media, and Persia, including a Journey from Bagdad by Mount Zagros, to Hamadan, the ancient Ecbatana, Researches in Ispahan and the Ruins of Persepolis, and Journey from thence by Shiraz and Shapoor to the Sea-shore. Description of Bussorah, Bushire, Bahrein, Ormuz, and Muscat, Narrative of an Expedition against the Pirates of the Persian Gulf, with illustrations of the Voyage of Nearchus, and Passage by the Arabian Sea to Bombay. 4o. Lond. 1829.

#### “Kypros, the Bible, and Homer.”

The Institute is indebted to Dr. Ohnefalsch-Richter for a handsomely bound copy of the English edition of his work *Kypros, the Bible, and Homer* [London: Asher & Co., 1893], to which frequent reference is made in the notes to his Paper on “Græco-Phœnician Architecture in “Cyprus” [p. 109], read at the Meeting of the 16th ult. The work is in two vols. large quarto—the one of plates to the number of 218, comprising illustrations of a large number of antiquities never before published; the other of 530 pages of text, with nearly 300 more illustrations—the whole, as regards printing, paper, &c., a model of

excellence. The coloured plates call for special mention, being reproductions of photographs painted by the author in the colours of the various objects represented—painted vases and clay statues, ornaments of gold and precious stones, painted glass, &c.; an exact idea of the colour and form of the originals is thus conveyed. The work treats of Oriental civilisation, art, and religion during centuries of remote antiquity, written in the light of the author's own researches in the course of his twelve years' work in Cyprus. In his Preface the author says:—

In Cyprus we are standing in the very midst of ancient Canaanitish civilisation as depicted in the Old Testament. On the other hand the worship of Aphrodite, the myth of King Kinyras and the accounts of the armour of the Achaian heroes, of Agamemnon's coat of mail and of Achilles' shield, bring us back again to Cyprus, but from an entirely different cycle of ideas. My excavations and researches during twelve years of unremitting toil in Cyprus brought me on the one hand to the Greeks and Homer, and on the other to the Semites and the Bible. The results of my labours are embodied in the present book.

## REVIEWS. XXXVI.

(99)

### MAYORS AND KINGS.

*London and the Kingdom: A History derived mainly from the Archives at Guildhall in the Custody of the Corporation of the City of London.* By Reginald R. Sharpe, D.C.L., Records Clerk in the Office of the Town Clerk of the City of London. 3 vols. Printed by order of the Corporation under the direction of the Library Committee. 8o. Lond. and New York, 1894. Price 31s. 6d. [Messrs. Longmans, Green & Co., Paternoster Row, London, and 15, East 16th Street, New York.]

There are not many institutions in this country as ancient as the Mayoralty of the City of London. It appears that six years ago it modestly celebrated its 700th birthday, and very properly marked the event by giving orders for the writing of a book which (following a suggestion in Mr. Loftie's *London*) should provide “a history of England as “seen from the windows of the Guildhall.” Such a book, containing as it must a quantity of matter common to general English history, and lying under the stultifying curse of being written to order, might well have turned out unutterably tedious; but Mr. Reginald Sharpe, D.C.L., to whom the work was entrusted, has made of his task a distinct success. The archives of the City have been at his disposal, and he has added generously to the value of his three volumes by giving copious references to his original authorities, and by printing, in a series of important appendices, several of the more interesting documents in the custody of the Corporation. The chronicle of London's greatness naturally goes back to very early days; in fact, to that remote and rather indefinable date when its position on the “most delicate and serviceable ryver of Thames” enabled it to supersede Venice as the Queen of Commerce, and to become, in the language of the

Venerable Bede, "the emporium of many peoples coming by land and sea." Since that time, and the still earlier days of the Roman occupation (under which the place was not without its mercantile importance), the Metropolis has had a most intimate and vital connection with the life of the kingdom, assuming, as Mr. Sharpe points out, a special initiative at certain special crises. London was not the least of the agencies that wrung from King John our cherished Magna Charta. It was the Londoners who, on the landing of the usurper Stephen, announced that it was "their special privilege and right on the death of a king to provide another in his place," and it was they who proceeded by a meeting of aldermen, perhaps with more spirit than legality, to elect him. Edward III. and Henry V., not to mention other monarchs, relied in their wars upon the City for subsidies of men and money. Again, it was London whose "trained bands" in the Civil War raised the siege of Gloucester, and practically turned the day for the Parliamentary side. These and many another incident, apart from the continued stability, the important *personality*, so to speak, of the City, which is potent even when apparently quiescent, are more than enough to justify a recapitulation of England's history from a London point of view.

Although architects may not gain much special or technical information from these volumes, the elected scope of which intentionally excludes other than historical matter, none the less is it an important addition to that class of general literature which finds a proper place on our Library shelves. Not that London in its material aspect as a collection of buildings is entirely overlooked in the book. There is necessarily more than a passing allusion to the superb but, at the time, impracticable scheme of rebuilding and rearrangement which followed the Great Fire. This was a case where architecture pressed itself into history; so that it is no deviation on the part of the historian to deal with the architectural problem then presented. Viewed as a purely historical work, the book still has its welcome on our shelves, for English architecture and English history are so closely interwoven that no one who loves the one can afford to neglect the other.

Turning to the Appendices, one finds there a transcript of many documents, of both curious and pathetic interest. Those who love Sandwich, for its architecture, its golf, or for the profound charm of its desolation, will take interest in a quaint report from the city to its "Sovereyn lord and moste Christian Kyng," Henry VI., touching an unfortunate enterprise "late hadde upon" that town by certain "enemyes and adversaries" from France and Bretaine "at six of the clock on a certain September Sunday in 1457.

In 1650 came a letter to the Mayor and Aldermen from the Council of State ordering that the

two statues that stand at the west end of "Paul's," representing King James and the late King, "forthwith bee throwne downe"; and, further, that the statue of King Charles at the Exchange "be broken off and the Septer broken out of his hand." This letter was followed a month later by another announcing that the Council had further deliberated and resolved on the total removal of what remained of the said statue.

In conclusion, a word of refreshment to Londoners. Do you never feel, you who are real Londoners *living* in London—do you never feel oppressed by a sense that the pores of nature are shut in by pavements, asphalte, and stones? Have you not at times a half belief that you are not really living on earth at all, but on some man-made composition? Everything you can touch and see, save the sky and occasional trees, is of human manufacture or wrought by human hands. When you find yourselves sinking under the oppression of such a nightmare, console your imagination with that rather selfish edict of Henry VIII., which you will find on page 403 of vol. iii. You will then realise that, unless this proclamation has since been repealed, so long as you wander between the Palace of Westminster and St. Giles-in-the-Fields, or within the boundaries of Islington, Highgate, Hornsey, Hampstead, Willesden, Acton, Chiswick, and Chelsea, you are straightly charged and commanded, whatever your state, degree, or condition, not to presume or attempt to hunt or hawk, or otherwise take or kill, the games of "hare, partridge, ffsaunte and heron." If you reflect on these possibilities of sport from which as a loyal subject you are debarred by Royal selfishness, you will gain the comfort of the thought that the under-earth of London really is the earth of the ploughed fields and copses, though now covered (it may be only for a time) by these miles of deep-cellaried houses, these burrowing railways, and this network of tangled drains and mains.

PAUL WATERHOUSE.

(100)

## THE PARTHENON SCULPTURES.

*Essays on the Art of Pheidias.* By Charles Waldstein, M.A., Director of the Fitzwilliam Museum and Reader of Classical Archaeology in the University of Cambridge. 8o. Lond. 1885. Price 30s. [Cambridge University Press.]

This somewhat bulky volume, admirable in its general arrangement, its typography and illustrations photographic and engraved, consists of a series of nine essays dealing, for the most part, with the art of Pheidias as contained in the sculptures of the Parthenon. A brief synopsis of the work will best convey an idea of its interest and value. Leaving aside for the moment the introductory essays dealing respectively with "the province, aim, and methods of the study of classical archæology" and "the spirit of the art



"of Pheidias in its relation to its age, life, and "character," we find in the third a vivid and interesting description of the discovery, among the fragments at the Louvre, of the missing head of a Lapith from one of the metopes now in the British Museum; a discovery reflecting great credit, not only upon the insight of the author, but upon his methods of study as explained in the book, and further exemplified in his analysis of the special characteristics of the metopes. In the fourth essay we have an equally interesting study of the western pediment and of the claims of the Venice fragment to a place there. Incidentally the tragic history of the spoliation of this perfect work of art is told in a manner scientific, no doubt, but, considering the subject, matter-of-fact. The fifth essay deals with the eastern pediment; but we have not here the interest aroused in the two which precede it by the discovery and identification of previously missing parts and consequent reconstruction. Concerning this group there is a great deal more to be said from the archaeologist's point of view, inasmuch as there is much less remaining to be seen. It would seem an essential part of such a work that the author should evolve a new theory regarding the original intention and meaning of the sculptures. That the one here given is beautiful must be admitted; that it is reasonable can scarcely be denied from the exhaustive and learned comparisons with the literature and art of the same and later periods. Especially must be approved the author's method of interpreting the various figures by means of artistic rather than philological data, and no less his modesty in commending rather than commanding our attention to his theory. Essays VII. and VIII. contain the story of the frieze and the three terra-cotta plaques. The description and analysis of the meaning and beauty of the frieze—though, as is natural from the archaeological point of view, the former seems to be regarded as of most importance—are dealt with in a masterly way; and the interest of the book reaches a climax in the discovery of the three terra-cotta plaques or fragments (in such widely scattered spots as the Louvre, the Museum at Copenhagen, and the Kircherian Museum at Rome) representing on a much smaller scale several figures from the frieze. That these correspond in the most minute detail to the sculptures themselves we have evidence, not only in Dr. Waldstein's list of measurements, but in the photographic reproductions of marble and terra-cotta placed side by side, so that we are almost driven to the conclusion (suggested indeed but in no way claimed by the author) that we have here the original studies for the execution of the frieze by Pheidias himself. The record of the systematic search—after the first find—by Dr. Waldstein, his friends, and assistants for yet other fragments, and their reward in the discovery of two, the investigations as to their authenticity and *provenance* among all sorts of people, from museum

directors to antiquity forgers, reads like a page from the diary of a modern detective. Yet the investigator remains calm, and again gives us a curious indication of the scientific aspect when he claims a value, not so much for the discoveries as for the methods by which the results were achieved. And, indeed, these require no further justification.

I have said enough, without entering in detail on the two remaining essays and the appendices dealing with the Athene Parthenos, the School of Pheidias, and cognate subjects, to show that this work should prove of extreme value to the archaeologist from the clear light thrown upon the many questions of dubiety concerning the sculptures of the Parthenon. To the general reader, for whom in too many instances the study of archaeology is synonymous with deadly dullness, the lucid explanation in the first essay of its sphere, its aims, and manner of working, together with the fascinating story of happy discovery and patient piecing together of forgotten fragments towards the building up of these historic treasures of art, should prove how far wrong he has been in his conclusions, and open up a new world of interest. To the artist interested in art for its own sake—not for its history or meaning—and in Greek sculpture as one of its highest expressions, the book will prove, as regards its opening chapters at least, to be of doubtful authority, a very bone of contention indeed. The author claims a place for archaeology among the exact sciences, and such we are willing to accord it; but the professor of an exact science is scarcely to be trusted to expound, as he here proposes to do, not only "the treatment of "Greek art," but "the principles and theory of "art in general." Science and art work on different planes, but the difference in their outlook is scarcely sufficiently expressed by Dr. Waldstein's dictum that the one deals with "*whatever is*," the other with "*the ought to be*." For art is, and science therefore could deal with it and explain it; but, in this instance as always, it fails to do so. The scientific view of art, of its interest and motives, the careful and exact analysis as the result of which one "cannot see the wood for the "trees," shows itself repeatedly throughout the book, and especially in these opening essays; as in the extremely philosophical but quite unsatisfactory discrimination between the arts of painting and sculpture (pp. 12-14), and still further in the intimation (p. 42) of the proper attitude in which to approach a "perfect work of art." "We "should say," according to Dr. Waldstein, "What "a majestic head of Zeus, what a strong athlete, "what a graceful attitude!" As well insist that the true appreciation of a portrait by Velasquez should call forth the remark, "What a handsome man!" of a cattle piece by Potter or Troyon, "What a fine "brown cow!" The same confusion as to the real essence of art may be observed in the author's contention that the Greek's view of life was essentially "plastic"; that therefore "*art* was so

"essential a part of Greek life . . . so thoroughly permeated their system, that it occupied the position of one of the common needs of their life." For us moderns, on the other hand, "art is either associated with museums, or is considered a part of domestic decoration." That the thought of the Greeks was essentially plastic, that their conceptions of things were formed by means of mental pictures of outward forms, while with us it is rather through words in sound or symbol, is no doubt true; but does it follow that a knowledge of art, leading either to production or appreciation, was with them a general commodity? I think not. In that "tedious brief scene of Pyramus and his love Thisbe," which Shakespeare sets before Duke Theseus of Athens, the conceptions are "plastic" to a degree:—

In this same interlude it doth befall  
That I, one Snout by name, present a wall:  
This loam, this rough-cast, and this stone, doth show  
That I am that same wall: the truth is so.

But appreciation of art here, of fitness or of beauty, is not markedly in evidence. That the days of Pericles had their Bottoms, Quinces, Snouts, and Starvelings, as had those of the imaginary Duke Theseus, can scarcely be questioned. Too much insistence, however, has perhaps been placed on this, at best a side issue in Dr. Waldstein's able book. As an instance, on the other hand, of his accuracy and insight in other and more technical directions; we have his happy definition of the dual aim of the sculptor being "to vitalise stone and metal, to monumentalise life." Generally clear in diction, the work is unfortunately marred by occasional uncouth, if not ungrammatical, forms, such as "great-thoughtedness," "comparison among each other," "joined among each other," "threeness," and the like; and while the different dates at which the essays were written may explain a certain amount of repetition, it is unfortunate that, when published as a whole, some revision of this defect was not attempted, particularly where in Essays VI. and VII. (pp. 225, 238) the same idea is twice presented in identical language.

Glasgow.

ALEXANDER N. PATERSON.

## NOTES, QUERIES, AND REPLIES.

### DR. RICHTER'S PAPER [p. 109].

#### The early Ionic Capital.

Few present at the reading of Dr. Richter's Paper on the 16th Dec. could have failed to remark the beautiful drawing of some early Ionic capitals, the work of Mr. Robt. Weir Schultz, which he had kindly lent for the occasion of the meeting. The drawing, which renders with rare skill, delicacy, and faithfulness the texture and subdued colouring of these old-world relics, figured on the walls of the Royal Academy in its

exhibition of 1891. The capitals represented belonged to a series of pedestals, supporting votive figures, which stood on the Athenian Acropolis previous to the Persian invasion (480 B.C.), and which were unearthed during the excavations there some seven or eight years ago. The drawing, reproduced by lithography, appeared with several other illustrations in *The Builder* of the 19th December 1891, for the purposes of an article "On the Early Ionic Capital" by Mr. Schultz, printed on pp. 456-58 of the same issue. These capitals, Mr. Schultz says, are invaluable to the student of archaic Greek architecture, inasmuch as they were undoubtedly copied from prevailing types of the time, and so are useful in aiding us to get at the forms of the Ionic capital of the sixth century B.C. and earlier.

#### Wood Imitation, and the early Volute.

From Professor G. BALDWIN BROWN [H.A.], M.A.—

There are two points of interest in Dr. Richter's Paper read at the General Meeting on the 16th Dec., one concerning the copying of wood forms in stone, and the other relating to the origin of the Ionic volute. In their imitation in masonry of structural features such as roof-timbers, the tombs explored by Dr. Richter resemble many of the more elaborate Etruscan sepulchres, while they seem to carry to the furthest limits that curious translation into stone of wooden details of door furniture and the like of which the Marquis de Vogüé gives such striking examples from among the stone cities of Bashan. Many of the chief examples in the ancient world of this copying of wood forms in stone occur in tombs, and this is doubtless due to the endeavour to make the sepulchre as much as possible like a house. A people amongst whom timber was the most conspicuous material of domestic architecture followed its characteristic forms in sepulchral structures, and some of the results are the early Egyptian sarcophagi, the façades of the royal mausolea in Persia, the Lycian monuments, the Etruscan mortuary chambers, and now these Cyprian tombs described by Dr. Richter. It would be somewhat rash, however, to infer from such instances of the employment of timber features in stone tombs that the particular people in question always used wood forms in stonework. This was certainly not true of the Phœnicians, who, building equally well in timber and in masonry, seem habitually to have used wood as wood and stone as stone. Solomon's palace they built for him as a timber structure in the timber style; while Solomon's temple, with the terraced substructures of the whole royal "burgh," was being constructed in the purest stone style without any of the columns or mouldings that suggest an ultimate origin in wood. The Etruscans, though introducing wood forms into both tombs and temples, proved themselves to be born masons in



their treatment of stonework in walls and gates and arched conduits.

That the Ionic volute is, ultimately, a vegetable form has been, for some time past, generally recognised; but it is none the less true that the Greeks themselves in the historical period regarded it rather as a rolled-up band or cushion. The girdle, or *balteus*, round the middle of it, on the side view, as well as the Vitruvian epithet *pulvinata*, is proof thereof; and this has conditioned Boetticher's treatment of the feature in his *Tektonik der Hellenen*. This transformation of a vegetable into a textile form suggests the reflection that the volute, as a decorative feature, was fashioned with a view to the front aspect only, and that its use for a capital demanding an all-round treatment involved difficulties which could only be surmounted by falsifying its whole origin and history. The volute in itself is an admirable feature for graphic delineation, and for the relief treatment it receives on the *stela*, by means of which its early history can be traced. The fully developed Ionic capital, on the other hand, when viewed on front and sides, offers contradictory elements which prevent our regarding it with unmixed satisfaction.

There are several questions raised by Dr. Richter's Paper, and by the discussion thereon, into which there is no space to enter. Too much need not be made of the difference between the horizontal volutes of the Ionic capital and the vertical volutes of the early *stela*, for these same vertical volutes reappear in a pronounced form at the corners of the later Corinthian capital of the Greeks. The interesting capital from Kition, figured on p. 131 of the JOURNAL, shows the two vertical volutes coalescing into the ultimate Ionic form. Any complete treatment of the early history of the Ionic volute would need to take account of Babylonian as well as Egyptian prototypes. As Mr. Phené Spiers remarked [p. 133], the canopy under which the god Samas is seated on the little Babylonian tablet in the British Museum shows the volute employed peripterally in Mesopotamian art before the date of any known Greek or Phœnician examples. That art may have borrowed the form previously from Egypt, but it might be well to use the term "lotus" with something of reservation. In his recent lectures on Egyptian decoration, Professor Flinders Petrie admits the impossibility of distinguishing clearly between the lotus and papyrus in ornament. Though in nature the opened lily and the papyrus-head in full flower are distinct enough, yet the Egyptians conventionalised them into much the same shape, while the buds of the two plants, as well in nature as in art, are practically identical. It is a question of some importance how far the Egyptians, in their employment of the two, recognised the essential difference in their structure. To employ the

tectural support, is against the best traditions of decorative art, which forbid any such absolute contradiction of the nature of a plant when used for purposes of ornament. To turn and twist a thistle into convolutions that suggest the tendrils of a climbing rose is not less tasteless than to stiffen the naturally lank stem of the water-lily into a reed-like upright; and one would prefer to find for the plant columns of Egyptian architecture an origin in the papyrus rather than in the lotus. Certain well-known Middle-Empire columns are certainly papyrus bundles, for each stem indicates the characteristic triangular section of that plant, while the later bud and open-flower columns, such as those of the hypostyle Hall at Karnak, are summary representations of clustered papyrus stems rather than monstrous and unnatural lotus stalks. The conventionalised papyrus-flower makes just as good volutes as the lotus, and there is no reason why the latter plant should monopolise all the attention of students of origin in ancient ornament.

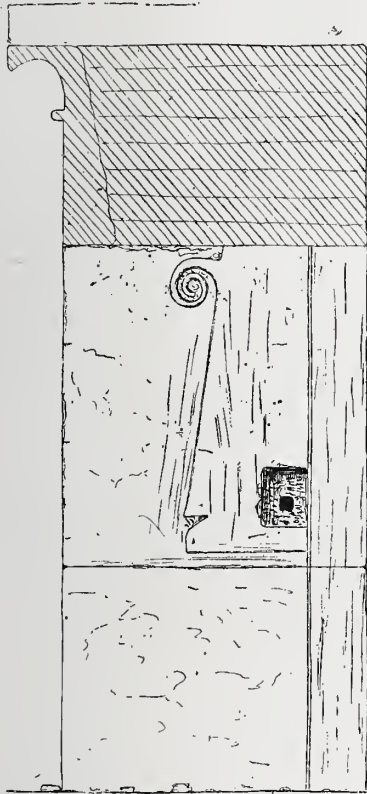
Edinburgh.

#### Volute at Tell el Hesi (Lachish).

From WILLIAM SIMPSON [H.A.], R.I.—

On reading Dr. Richter's valuable and suggestive Paper, I write to call attention to an example of the thin pilasters surmounted by an Ionic volute, similar to those represented in fig. 2, from tomb No. 3 [p. 115], and fig. 28, from tomb No. 2 [p. 125]. These instances are from doorways, and curiously only one volute is on the semi-pilaster. In THE R.I.B.A. JOURNAL for 25th September 1890, p. 424, will be found a communication of mine, with an illustration, entitled "Cast of a Slab found at Tell Hesi," a spot which I have very strong evidence for believing was the ancient Lachish of Scripture. Professor Flinders Petrie had only a few months before made some explorations at that place for the Palestine Exploration Fund, and this slab was one of his finds; he sent a cast of it home, which may be seen at the Office of the Fund, 24, Hanover Square. The merest glance will show that the slab from Tell el Hesi represents a rude pilaster similar to those in the tomb at Tamassos. A small brochure on the explorations, written by Professor Flinders Petrie, entitled *Tell el Hesi (Lachish)*, was published by the Palestine Exploration Fund, and in Plate IV.—a reproduction of a section of which [p. 165] is kindly permitted by the committee of the Fund—will be found Professor Flinders Petrie's restoration of the doorway where the slab was found. In that restoration there is the half-pilaster on the side of the door, under the lintel, and the volute projecting from the doorpost, the whole being an exact repetition of the arrangement shown in Dr. Richter's fig. 2. As Tell el Hesi is in South Judæa, and close to the Egyptian frontier,

this may be a point in favour of Dr. Richter's theory of the lotus origin of the Ionic volute. It at least shows that this peculiar arrangement was common along the whole extent of the Phœnician coast.



Section of doorway of pilaster building, Tell el Hesi. About 1,000 B.C. Restored by Professor Flinders Petrie.

It may be pointed out that these Cyprian and Phœnician Ionic-formed capitals belonged to pilasters, and not to columns; and in the instances of the Tamassos tombs and the Tell el Hesi doorway, they are not constructive, but they appear to be merely decorative. This cast does not detract from the bearing of these forms on the origin of the volute. Still it leaves us with another problem, that is, How did these pilasters with a volute become connected in that peculiar way with doors?

The above is quite a separate question from the origin of the volute. I forget now which of my early architectural masters first taught me that the Doric Order represented the proportions of the human figure—masculine; and that the Ionic was typical of the feminine, the volute having originated from copying the hair of the woman, twisted on each side of the head in spiral form. In my communication to the JOURNAL, referred to above, I have given my reasons for assuming that the Ionic volute originated in the horns of animals in primitive times: this origin I still feel inclined to adhere to. But at the same time I frankly confess that Dr. Richter's Paper leads me to hesitate and await further information.

#### The Use and Origin of the Greek Ionic Capital.

From R. PHÉNÉ SPIERS [F.], F.S.A.—

I desire to add to the remarks I made on Dr. Richter's Paper one very important consideration which does not seem to have been taken into account either by him, or by Professor Goodyear in his work on the Egyptian lotus plant; and

which I forgot to bring forward in the discussion. The main difference between the volute as employed in Egyptian and in Greek architecture is that in the first case it is introduced only as a decoration. There is no such feature as an Egyptian Ionic capital, for instance. In Greek architecture the Ionic capital is a *constructive feature, designed not only to carry the weight of the entablature and roof, but by its form to suggest a spread of the capital*. It is, in fact, a bracket capital, and, being placed parallel with the architrave, suggests a wider support than the abacus (always square) actually gives. The Greeks evidently felt the importance of this, for, when at each end there was no such architrave to support, they turned it into a decorative feature, viz. the angle volute. This led to a complicated arrangement on the inside, which was all very well when it was under a portico. When, however, in Pompeii, Ionic capitals were employed in the atria or peristyles, they were obliged to make a special design in which there were four angle volutes; and in these cases the Ionic capital was no longer a bracket support. It is this constructional quality possessed by the Ionic capital which inclines me to the belief that it was derived from Babylonian or even Median sources, where it was invented and always used for constructive purposes, and not only as a pure decoration. I am quite willing to allow that the Cyprus capitals as illustrated by Dr. Richter have all of them an origin which seems to be more Egyptian than Babylonian; in fact, as pointed out by Mr. Alma Tadema, the volutes are all vertical in their tendency, whereas in the Greek Ionic capital and the Babylonian examples they are all horizontal.

Since writing the above I have seen Dr. Richter's drawings illustrating the tombs in Cyprus, and more especially tomb No. 3, in which he describes the volutes decorating the sides of the doors. He seems to be at a loss to account for the fact that they are placed at right angles to the architrave, instead of being parallel with it. Fig. 2, on p. 115 of the JOURNAL, explains the reason. The volute capitals are used there in a decorative and not a constructive sense. There is, therefore, no reason why they should not have been copied from the Egyptian lotus. This and Mr. Alma Tadema's remark as to the horizontality of the Ionic capital, as compared with the vertical tendency of the volutes in the Egyptian and Cyprian lotus capitals, virtually settle the question. Dr. Richter's Paper, in which it is attempted to show that the Cyprian capitals are the missing links between the Ionic capital and the Egyptian lotus buds, has, if anything, proved the contrary, viz. that it is rather to Assyrian and Median sources that we must look for the origin of the Greek Ionic capital; in the evolution of the latter, however, the Cyprian capitals may have exerted considerable influence.





## PROCEEDINGS OF ALLIED SOCIETIES.

### THE LEEDS AND YORKSHIRE SOCIETY.

#### Modern Decoration. By Francis Donkin Bedford [A.]

Read 9th December 1895.

Among the many causes which have prevented Decorative Art in England being all it should be to us, there is this one—The world is so easy of access. We see so much, and become satiated, restless, and discontented. We lose ourselves, and forget that we, too, have within us the spirit of creation. We should study the works of the past, worship them, remembering, however, they belong to the past and we to the present. For we should never ignore the age we live in, but discover its beauties and be their interpreters. There are many influences at work which make it very hard for us to express ourselves truly. We are cramped and thwarted; competition, too, is so keen, and competition is the devil of destruction to Art. We are in such a desperate hurry to get a living that we make time the enemy of Art, instead of its friend. There are, however, many strong men who are expressing themselves with their hearts and minds, and many others, alas! who express themselves in a past language, or a present, because they have no language of their own. There is too much of the notebook in most buildings. Travelling is constantly put to a wrong purpose, and many, I fear, are travellers for this purpose.

Washington Irving in his delightful *Sketch Book* has a little paper entitled "The Art of Book Making," and he heads it with this quotation: "If that severe doom of 'Synesius be true, it is a greater offence to steal dead men's labour than their clothes, what shall become of most authors?' and I hope the doom is equally severe for those who steal living men's labour also. If we have no creative power at all, let us by all manner of means keep from art, which is creative or nothing. Let us remember that the man who accepts a 'job' without the intention of putting his heart into it, and produces a work in which his love is not apparent, retards the growth of art, and every such additional work adds to the countless thousands that are acting as false beacons to the public, who must be trained to help us in order that true art may flourish amongst us. Emerson, in his essay on Art, says that 'the Art which thus separates is itself first separated. Art must not be a superficial talent; such superficial artists reject life as prosaic, and create a death which they call poetic.'"

Then there are the revivalists, and English art has derived a great and never-to-be-forgotten benefit from those who, in the early part of this century, by their writings, told us of the spirit which animated the work of our forefathers—the spirit of love in design and truth in execution. This trumpet blast echoed and re-echoed throughout the land, and art, which had slept for a hundred years, "though it was no sleeping beauty," awoke refreshed.

Their words were one thing, however, but their words carried out in practice by them and their disciples were another. They are not thieves, but true lovers of a bygone age, who put all their trust in the past, and all their minds in endeavouring to resurrect it, and always in the most earnest spirit and entire honesty of purpose; and of these resurrections they would say, "This is art, translated 'by us, but worked out in its entirety and carried to a perfection by men in an age greater than ours, an age possessing all things conducive to great work. We dare

"go no further than they save to plan and arrange for the century in which we live, and our work will have life in consequence." Will it? The planning and arrangement and proportion are all very complete and clever; but where is the art? It is standing weather-beaten, in the towns, among the hills and valleys where they found and studied it, and no power on earth can transplant it, no translator revivify it. There is no such thing as revival, no such thing as the restoration of a force long since spent.

In such attempts we are false both to the past and to the present, and that begets a confusion which is worse confounded. We must be true to the present, and to it we must wed ourselves heart and soul, strengthened with the lessons the past has taught us—a past which has reached us slowly, and must be carried on by us in the same gradual way. There can be no cessation if we are true to ourselves and to nature around us. It is to nature we must turn, not to museums. Nature will restore all things, and the study of it should be seen in all we design. How often is design a travesty on Dame Nature, and how careful we should be in our study of her before we dare use her forms for our use! A great man's interpretation of nature is of greater interest to his fellows than nature itself, just because the animate soul is capable of reproducing the inanimate soul of nature. Emerson puts this very clearly, I think. He says:—

What is that abridgment and selection we observe in all spiritual activity, but itself the creative impulse? for it is the inlet of that higher illumination which teaches to convey a larger sense by simpler symbols. What is a man but nature's finer success in self-explication? What is a man but a finer and compacter landscape than the horizon figures—nature's eclecticism? and what is his speech, his love of painting, love of nature, but a still finer success—all the weary miles and tons of space and bulk left out, and the spirit or moral of it contracted into a musical word, or the most cunning stroke of the pencil?

Just as colour gives the chief beauty to the painter's work, so does line to that of the decorative artist. It is to me a very remarkable thing that painters and decorators (I do not allude to that delightful trade combination) do not sympathise with each other more. The decorator so often is narrow, and because there is an absence of the beauty of line as he sees it, he is too ready to condemn the painter's work without noticing all that lies behind it, whatever it may be—delicious harmonies of colour, atmospheric effect, or spontaneity of expression. And the painter is too often, alas! narrow also, and despises the work of the architect or decorative artist, and ignores altogether beauty of form in that he surrounds himself with, be it the outside of his house, if he himself builds it, or the inside and its furniture and fittings. What matters it to him what the form of the chair is like in which he lounges, smoking his pipe and meditating on his next picture? or what the form of the plates and glasses from which he eats and drinks? It is astounding this divorce between colour and line, and line and colour, where natural; but when it arises from sheer indolence, it is deplorable. There are so many opportunities now for artists studying one another's work in London and the provinces, and, what is more, for studying the work of the old masters, that there is little or no excuse for our not understanding one another. No architectural or decorative meeting should be called complete without a painter, and no sculptors' or painters' club without the architect and decorative artist. This peaceable kingdom is coming. We shall soon be dwelling happily together, and feed together, and know and admire one another's dens. . . .

In modern decorative art the quality that is most conspicuous by its absence is simplicity—that is, singleness of heart and mind. And this is curious, seeing that the masterpieces of the past, which are ever before our eyes,

have held their high position from generation to generation owing to this great quality in art. I do not say this quality of simplicity alone makes a work of art, but that no work can be a work of art without it. It may sound superfluous to say this; but it seems to me to be our duty, whenever the chance of speaking out arises, whether the audience be composed of those who hold the same opinions as the speaker or not, to wage war against this curse of our work—this absence of singleness of mind and heart.

Now these minds of ours differ, and consequently our tastes, and one artist is by nature florid and another very much the reverse; but their hearts can be just the same, and if the work of each is the direct outcome of his heart and mind, it is bound to have life and consequently interest. There are those who have too much heart and too little mind—sentimentalists who, carried away by this or that principle, produce affectations which they believe in their infatuation to be true to that principle, but which in reality are merely caricatures of it. And there are those who have too much mind—and that a wrong one—and no heart; whose art-school training gives them the power to imitate whatever is most popular, whether they believe in it or not, and who use this power merely as a means to fill their pockets. Of these I need say no more, save that their whole life's work is absolutely worthless to the present and future. And last and first, those artists in whose work we see the heart and mind direct glowing through it; true to themselves and true to the age in which they live; creators who observe nature and the work of those who have observed it. For may I quote here what I fully believe, that knowledge derived from observation and not from books is the only knowledge we desire in a work of art?

How beautiful our homes can be if, in however small a way, we carry out in decoration the principles we believe in—some of this decoration designed by those whose work we admire, and from the sight of which we gain strength and derive an ever-living pleasure; and some of it perhaps our own, which, being true to ourselves and our principles, we do not despise, but keep before us until we do something better.

And wealth is not needed to make a home beautiful or comfortable. Certainly we all wish to have riches to enable us to carry out this or that idea; but the home can be beautiful without riches, which is comforting. In fact, very often—too often—wealth degrades a mind by nature simple. When wealth comes in at the door the natural simplicity of taste makes a rapid exit by the window. The barest cottage has more charm than the mansion decked out by some modern upholsterer. I take, then, a small house, and give you a few of my ideas for what they are worth. Decoration does not only dwell inside the house; the exterior should be the introduction to the treasures within. Even if the house be of the worst type, we can do something to relieve its hideousness, and it is miraculous how far a little will go towards this end; and I wish my remarks to refer to such a house as this in which many of us are, as I have said, compelled to live in towns; for the display of good art in these, just as well as in that of the new house, will bring about the conversion of many that as yet have thought nothing about art at all.

Well, we can paint the door and the window-frames some beautiful colour, and we can take out the glass in the door panels—it is pretty sure to be bad—and put in its place subdued coloured glass of one tone in leaded panes, not small, and oblong for preference; or with a little more money we can do something more elaborate. The door furniture we can have made from our design. Even the number of the house or its name we can design too, for every little helps or mars. Printing can be made a very beautiful feature. The hall floor can be of oilcloth, which, though much abused, can be procured in good, rich, single colours, and the effect is broad and soft. It can

easily be washed, too, which is a great thing. Rugs of harmonious colour or good contrast can be thrown down to give warmth. The decoration of the walls depends upon their height, but a dado shoulder high in a hall I think an advantage, painted or of some strong material that can be cleaned, as the marks of those who wait here become conspicuous after a time on the paper if carried too low. This dado might be of one colour too, and separated from the paper above by a rail of delicate moulding of slight projection. I saw, the other day, a dado carried out in Willesden waterproof canvas, and this, or the Willesden paper, can be had in delightful greens, and, in my opinion, it looks very well. This might be divided up in oblong panels by styles of slight projection, with the angles delicately moulded, running from the frieze to the skirting of stained and polished wood, of a lighter or darker shade of the wall tint. Wall-paper designs are so numerous and so beautiful that there is no excuse for choosing a bad one, and when I say that the best decorative artists are engaged in producing designs to suit all purses I have said what you already know, and enough—that is, if you use paper at all. It should, I think, be used with great judgment. The pattern we must consider in relation to the size of the room. Where there are many pictures it seems to me best to use a plain distempered paper, which is preferable to distempering the walls; or a paper of warm and subdued tint, of small design, not spotty, for, if large and visible, the pattern disturbs the pictures, and the pictures the pattern. A frieze can be used with great effect either plain or stencilled, with inscription and foliage specially designed and carried out by the architect himself, if he likes; or it can be bought to match the paper, and there are some splendid designs. There ought, however, I think, never to be a fuss near the ceiling. The pattern should be flowing, that the eye may not rest on any particular part. It depends upon the height of the wall whether a frieze is wanted or not. They should never be shallow; and if deep, they very often cut up a wall too much. There is no rule for the height of a dado and depth of a frieze. Such rules are no good. The decorator must use his own judgment. If the frieze is bought to match the paper, the size, of course, is fixed; but the height of the room should, of course, be considered before you order it.

Ceilings should be plain. It is a pity to paper or decorate them, and the space is always valuable in its relation to the decorated walls. If there are plaster ornaments for gaseliers they should be taken off. Gas, though useful in a bedroom when used at intervals, is ruinous to a ceiling and other things when constantly used in a sitting-room. The doors should be painted of one colour throughout the house, and both sides the same. In a small house, too, the scheme of colour should not be varied to any great extent in the rooms. It is disturbing.

In building a house I should like the doors of wood, and, if coloured, merely stained, so that the grain may show. Let us be sure all our colours harmonise—nothing is more miserable than to have a room which is a patchwork of colour. We should arrange as much as we can for pictures, which ought to be a part of a room, and not spots about it, and in our own homes, or in those of whom we can influence, the frames should be most carefully considered, for frames of a tawdry nature, of bad gold and of bad design, completely spoil a wall, however beautiful it may be. If we know of a valuable and beautiful painting to be placed in a room, we might make a special treatment for it, not so as to draw immediate attention to it, but to make it a beautiful part of a beautiful whole. If it is our own home we are decorating we should design and make, if possible, or have made, all our own furniture, and we should endeavour to make those whose houses we build have their furniture specially designed and made for them. Book-shelves and cup-



boards do not cost much to have made, and can be delightful features, and mantelpieces in cheap houses want hiding, and it is not an expensive thing to convert them into something plain and good by covering them.

How important, too, a floor is. I like to see a good wide margin, painted or stained and polished, by the walls, and a plain carpet, which should not attract. Good-pattern carpets, of sombre hues, are very expensive, whereas a plain and harmonious colour in a strong material is good and pleasant to the eyes, and does not attract from the walls, which it should lead up to in colour. In our choice of furniture we must be very careful. If we cannot afford the best that design and execution can give us—in fact, if we are quite poor—let us be content with the simplest we can buy. Good ash chairs are sold now, and can be stained to any colour and look well, and rush bottoms are not to be despised. Sideboards are generally horrible. It is much better, to my mind, to fill in the recess for ourselves with a design consisting of the cupboards below and shelves above, coloured to match the other wood-work of the room. In all the details of a house I would say we must help on modern decorative art where we can, and be very sure in our purchases we are not retarding it. We must put our thoughts into every detail of the house, and let everything lead up to one object, and that object to make the house our home, and not merely a series of rooms serving as advertisements to furniture dealers and upholsterers. It is very hard to help as we wish to do; but it is our duty, and all can help. It is universal help which will bring about the change, and crush out all the commercial rubbish which is littering our land, and I appeal to you to strive and carry on the resolutions you may have made to do this with fresh vigour; or if hitherto it has been out of your power to help, to begin to do so now, for it is the mission of every one calling himself an artist, or the friend of an artist. It is a mission of great difficulty, and very disheartening. It seems sometimes hopeless that modern heart and mind in the arts and crafts will ever get a footing. Of the public many are satisfied with bad things—quite satisfied—and some are never happy unless they have the old things. They say these are best, and consider the artist who dares to try and put his own work forward in the face of this past work, which they think they understand, is a prig. But the reason of their not seeing the good in some of the best modern work is because they do not understand the past. To those who do sympathise with us, and who wish to make their homes beautiful, I would ask them to consult with the artist before decorating and furnishing their houses. When an artist is employed by you to build your house, it is, I think, your duty to employ him also to decorate and select the furniture, or design it to suit the rooms upon which he has spent so much care and thought. I know of many who, because they are artists, would do this for love rather than see their carefully designed rooms ruined by bad colours and bad forms. Be careful, then, in your selection, and aid those who by their love for their work are making Decorative Art a living art. Beautiful examples of this work are constantly before us. The great garden of Art is now being weeded; fresh seeds are being sown; some flowers have already appeared upon the earth, and are bearing fruit.

"Awake, O North Wind" of strength and truth; "and come, thou South" Wind of love and inspiration; "blow upon" this "garden, that the spices thereof may flow out."

## LEGAL.

### Residential Flat—Restrictive Covenants.

HUDSON v. CRIPPS.

This was a motion by a Mrs. Hudson, tenant of a flat in a block of buildings known as Oxford Mansions, near

Regent Circus, which had been built and for many years used as residential flats, to restrain the landlord from turning the greater part of the building into a club. The motion was heard by Mr. Justice North, in the Chancery Division, on the 13th December.

The building is a quadrangular one, with a court in the middle, having one common entrance and staircase for the use of all the tenants, the premises on each floor having access to the general staircase by means of verandahs communicating therewith.

The tenant had signed an agreement on a printed form which was used for all the flats, and containing stipulations that the tenant should use her rooms as dwelling-rooms only, and should observe a series of regulations plainly intended to preserve the comfort and convenience of a number of residents. There was no evidence that any representation had been made to the tenant that the other flats were let on similar terms. The landlord had commenced extensive alterations with a view to turning the whole of the ground and first floors of the building into a fashionable club. He did not propose to interfere with the plaintiff's flat, which was on the second floor, or the approach to it; but some, at least, of the flats on the second floor were to be used as bedrooms for the members of the club.

Mr. Swinfen Eady, Q.C., and Mr. J. Bradford were for the plaintiff; and Mr. S. O. Buckmaster for the defendant.

Mr. Justice North held that the tenant was entitled to have the general character of the building preserved, and granted an injunction against the landlord's using the building for any purpose other than residential flats, and from making any structural alterations with a view to any use so restrained.

### The London Building Act 1894.

MARSLAND v. GREEN.

The following case, which was heard by Mr. Hopkins at Lambeth on the 17th December, illustrates the practical working of section 201 (14) and sections 206 and 211 (4) of the London Building Act 1894. William Robert Green, the owner of No. 98, Hollydale Road, Peckham, was summoned by Mr. Ellis Marsland, district surveyor, for converting a building, to wit, a greenhouse, which when originally erected was legally exempt from the operation of the London Building Act, into a workshop and store.

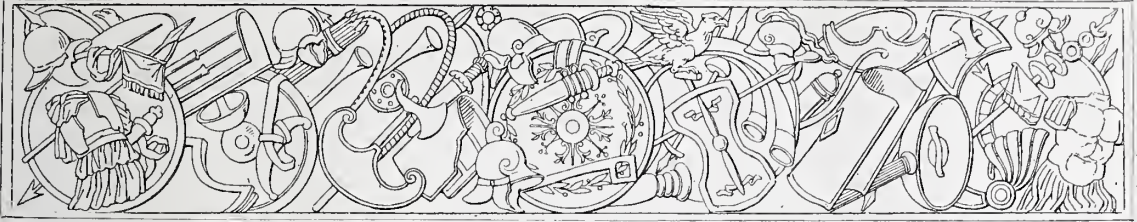
Mr. Williams appeared in support of the summons, and Mr. Webb defended.

Mr. Williams said the summons was taken out for a contravention of section 211 of the London Building Act. Mr. Ellis Marsland stated that on the 7th December he visited the premises, No. 98, Hollydale Road, and found a greenhouse used for the storage of paint, turpentine, wall-papers, and other combustible materials. A portion of the roof was covered with corrugated iron, and two of the sides were boarded up. The building was originally a greenhouse. Under the new Act a builder could put up a greenhouse without notice to the district surveyor. Builders were finding that out, and were putting up greenhouses and then converting them for use for other purposes.

For the defence Charles Malthouse, the tenant of the premises, said he entered into occupation in September last, and the greenhouse was erected by the defendant for his (Malthouse's) convenience. It was now in exactly the same condition as when it was originally constructed. The witness had been repairing the house, and during the progress of the work he put some paint-pots and other articles in the greenhouse out of the way. He intended to use the building as a greenhouse when a stove had been fixed.

Mr. Hopkins adjourned the summons *sine die*.

Samuel Morrison, of The Gables, Alleyn Park, was also summoned for converting a greenhouse into a billiard-room. In this case the offence was admitted, and Mr. Hopkins fined the defendant 20s. and 42s. costs.



ADDRESS TO STUDENTS. By ALEX. GRAHAM, F.S.A., Vice-President, at the Sixth General Meeting, Monday, 20th January 1896.

LADIES AND GENTLEMEN, —

IT has been the custom in recent years for the President to deliver an Address to Students previous to the annual presentation of Medals and Prizes. The occasion is one of exceptional interest, and it must therefore be a matter of regret to all of us that the engagements of our revered President preclude his taking the chair this evening. In occupying this honoured position for a brief moment, by the privilege of the Council, I am quite aware that any words of mine, or any expressions of opinion, cannot have the same influence upon this assembly, and especially upon those to whom this brief address is delivered, as the weighty utterances of the distinguished gentleman who presides over our deliberations. But I rely on the goodwill of our younger brethren, assuring them that every word spoken from this chair is prompted by the highest motives—to direct them in their studies, to encourage and assist them in their career over the troubled waters of professional life, and to further day by day the object for which this Institute was founded—the promotion of architecture as the first of the Fine Arts.

Each year as it comes round bears its own record of progress or activity, and indicates in increasing measure the boundless requirements of modern life at the hands of the architect. Looking round the walls of the Institute, it cannot be said that inactivity has prevailed in our ranks during the past year, or that artistic power and manipulative skill show any signs of departure from that high standard they have attained in recent years. It is not my intention to offer any criticisms upon this magnificent display of drawings, for that pleasurable task will devolve upon others who take part in this evening's proceedings. But I venture to think that any impartial critic will find in many of these admirable works in line and colour far truer representations of the art of the architect than in the pretty little pictures that are made for the annual display at Burlington House. I am aware that differences of opinion prevail as to what is an architectural drawing, and as to the value of such pictorial representations by skilled draughtsmen as find favour at the Royal Academy. The pages of *The Builder* were open a few months ago to a free consideration of this subject, resulting in some valuable expressions of opinion which appeared from time to time in its columns. To my mind it has always seemed wrong for the architect to enter the lists, as a rival for public approval, on the same footing as the landscape painter, or in any branch of strictly pictorial art. The general public see in the galleries of the Academy devoted to painting and sculpture the creations themselves of the painter and sculptor, face to face. In the architectural room they do not see the architect's creations, but mostly pictorial attempts of varying degrees of merit, necessarily ineffectual, to represent them. So much of the pictorial art as finds place in an architect's drawing is an endeavour to represent, with more or less effect, the dimensions of a building, its symmetry, proportions, grace of line, and traits of invention. But an architect's drawing entirely fails to make felt the structure's weight and



mass, or to exhibit the skilled combination of the forces of down-pressure, thrust, and resistance which it embodies. The nobility of aspect never absent from an ancient masterpiece of architecture is a testimony to its having been conceived as an embodiment of these qualities, quite as much as a presentment of grace, symmetry, and proportion of line and surface. And in the realised combination of all its factors lies such a structure's supreme charm. In an architectural room no indication is possible that, in the conception of any design, one ounce of ponderable matter has been conscientiously dealt with. If, therefore, a work of architectural merit can only be rightly judged by the realised combination of all its factors, and if none but a skilled architect can form an approximate forecast of their realised expression, surely it is desirable to devise some means of impressing upon the general public, who saunter listlessly through an architectural room, their hopeless and absolute incapacity to pass judgment upon architectural designs. I make bold to say, with all respect to the august body that rules at Burlington House, that the ordering of the architectural portion of the exhibition admits of much improvement, and that more encouragement should be given to architectural drawings that are understood only by architects, and less to feats of pictorial draughtsmanship for the purpose of playing to the gallery.

In making these comments I have no desire to underrate the value of the beautiful drawings displayed on these walls, nor to check the aspirations of those whose manipulative powers with pencil and brush excite our admiration. But it cannot be too forcibly stated that draughtsmanship, however skilful, is not architecture. It is only a fascinating means to a nobler end, and its encouragement by those who control the teaching of a rising generation should not be at the expense of those more solid studies which are the essentials of any one desiring to take rank as an architect. The noblest edifices ever raised by human genius were conceived at a time when draughtsmanship, as we understand it, was unknown. In furtherance of my views on the subject of pictorial drawings, it is satisfactory to note that in many of the instructions in recent competitions for works of magnitude a clause is inserted to the effect that perspective drawings are inadmissible. It is a wholesome clause, not because it saves trouble and expense, but because, for the purposes of any assessor of experience, such drawings are unnecessary and often misleading.

The literary work of the past year may be regarded as satisfactory. Eight candidates entered the ranks for the Institute Medal, and three of the Essays submitted have received commendation from the adjudicators. All credit is due to the competitors for their patient research, especially to the author of the work which has deservedly gained the Medal. It is proposed to publish this Essay in our JOURNAL, and to add some remarks on essay-writing generally, as a guide to young aspirants in future years.

In the early part of last session some thoughtful Papers were read in this room by architects of repute on the subject of Simplicity in Architecture, showing by forcible reasoning that restraint was an element never to be neglected in architectural compositions. Without trespassing on your patience by referring to the arguments used to enforce their convictions, or even assuming that such sound teaching should necessarily be soon followed by practical results, it is enough for us to know that in the designs submitted for the prizes to be awarded this evening, simplicity is more apparent than in similar competitions of recent years. Overloading surfaces with meaningless ornament, which drew from Mr. Gladstone a remark by no means complimentary to modern architects, is kept in restraint; and simplicity—but simplicity without poverty, as Mr. Alma Tadema naïvely remarked—has established a position which, it is hoped, may be maintained by the rising school. I wish I could say that the results of judicious advice given here by Mr. Macvicar Anderson four years ago with respect to planning had been equally satisfactory. The subject selected for the Soane Medallion

Competition last year was easy of grasp, and yet there is evidence in most of the designs that convenience of arrangement had not received that share of attention which it deserved. But in justice to our younger brethren it should be observed that success in this important element of design is more frequently to be found in the works of older men, the outcome of a kind of knowledge which is not to be found in books, and the result of a wide experience of men and things.

One of the tendencies of modern times, both in Art and Literature—and in no art is it more conspicuous than our own—is to brush aside the teachings and methods of previous generations, and to regard the rules of our predecessors as so much unjustifiable restraint. But if we look back at those periods in history when architecture attained the highest degree of perfection, and attracted a large share of public notice, we shall find that methods and rules were held in veneration, and that the restraint they exercised not only strengthened the judgment, but had a salutary influence upon the taste of the period. It has been said that no new important principles of æsthetics remain to be discovered, and that anything approaching originality in architecture is restricted to new combinations of that which is old, aided by the employment of such new materials as the earth may disclose, and the discovery of new scientific inventions. Such combinations are practically infinite and inexhaustible; and science, which has done so much in our own time to facilitate the arts of construction, is always a loyal handmaid in the cause of progress. It is for the genius of the architect to utilise such resources to meet the varying requirements of his age, and to shape the whole into forms of beauty for the delight of mankind.

Introductory remarks addressed to an assembly of experts are generally tedious, and, like a long preface to a little book, are apt to become wearisome when the contents of the volume are inviting. The pages of the little book that I will now introduce to your notice comprise three short Papers of critical remarks upon the students' competitive work of the past year. These papers are the result of studious thought on the part of three selected members of our body. They have been written in the same good faith and with the same loyal spirit that prompted the penning of these few introductory notes; and I am sure that the students to whom they are specially addressed will give them an attentive and a patient hearing.

## REVIEW OF THE DESIGNS AND DRAWINGS SUBMITTED FOR PRIZES AND STUDENTSHIPS 1896. On behalf of the ART STANDING COMMITTEE.

THE SOANE MEDALLION AND THE GRISSELL MEDAL. By WILLIAM YOUNG [F].

MR. CHAIRMAN, LADIES, AND GENTLEMEN,—

There are two ways of reviewing the designs and drawings: one is to say something nice of every one—this is the most agreeable way, but it would not be profitable to the students; the other way is to be frank, just as one would be if one were acting as assessor in a competition for a building to be erected. This may not be so pleasant, but it will be more profitable to the students, and it is probably what they themselves would prefer. Mr. Baggallay, Mr. Pite, and myself, appointed by the Art Committee to review the designs, have decided to adopt this course; and I would ask the students to take our criticisms in the friendly way in which they are offered, and as intended entirely for their benefit.

### THE SOANE MEDALLION.

On looking round the drawings one is impressed with the large amount of careful work the students have bestowed in preparing these seventeen designs. The drawings throughout



are mostly excellent and creditable, but I must add that I have heard the opinion expressed, and I agree with it, "that the quality of the draughtsmanship is higher than that of the "designs." But this is natural, and what one would expect in students' works, for the art of designing comes only with practice and experience. In most cases the geometrical drawings are better than the perspectives, and many of the designs look better on the geometrical elevations than in the perspectives. There is only one Gothic design; the others are mostly of the modern classic revival school. This shows the present current or fashion of architectural design, for I think I should not be far wrong in supposing that if a competition similar to this had taken place fifteen or eighteen years ago, the position would have been reversed, and the majority of the designs would have been Gothic.

The design under motto "L'Espoir" has a well-considered, sensible plan, and fairly good elevations, especially in the composition. I do not think the corner tower adds to the quality of the design as much as it might have done. The upper part is heavy and not happy. The perspective shows considerable power of draughtsmanship. It is clever, but sketchy—a kind of impressionist drawing, which leaves a good deal to the imagination. This might find favour with a building committee; but when there is a professional assessor, I rather think there would be more chance of success by leaving nothing to his imagination. The design of the capital to the columns is quite original, but I do not think it would add to the author's chance of the prize.

"Mightier than the Sword" places the meeting-room on the second floor, an arrangement that would not be likely to find favour with any of us. The elevation is bold and massive, but the main cornice is too heavy; and with the architrave under it, there being no frieze, the cornice looks about one-third the height of the column. On the ground floor there are massive rusticated columns, with a rustic course in place of a capital. This is really carrying the rustic, which seems to find so much favour at present, too far.

"Progress" gives us a better entrance-hall than many of the other designs, but the elevations suggest business premises rather than an Institute of Architects. The half-inch scale detail is weak.

"Compass" and "The Dun Cow" both show good designs, combining simplicity with good detail. The former has an attractive coloured perspective showing red brick and stone, and would make an excellent elevation for a mansion. There is a well-planned library, with indifferent lighting. The meeting-room is about 34 feet wide, with two rows of three-square pillars, leaving the centre space only 20 feet. This probably lost one chance of success.

"Royal" and "Green Dragon" are both extraordinary designs and do not show much knowledge of detail, although the latter shows a great amount of originality which would not be appreciated by an assessor. I notice that those students who by their drawings show most knowledge of detail and proportion have rather avoided attempting anything strikingly original; whilst those students who show least knowledge of detail and proportion have attempted most to be original. I may safely assure students that to be original, and at the same time good in design, one must know everything of the particular subject in hand.

"B in a Circle" is better in elevation than in perspective, where the pediments of the second-floor windows are too pronounced, and the keystones too conspicuous—nearly as deep as the width of the opening. This is probably a mistake in the drawing rather than in the design, which both in elevations and sections shows good qualities.

"Pseudonym" is an ambitious design, and the excellent drawings show that its author is well acquainted with classic detail and proportion; and yet somehow he seems to have missed the mark. I think this arises chiefly in the composition, for there is no want of skill and care in the drawings and detail, but there is a want of a leading feature. There are four

storeys, all of about equal importance. Surely the principal floor with the meeting-room might have been emphasised and made more important than those with smaller and less important rooms. The plan is compact; but here, as in most of the designs, the hall is cramped in size, and the meeting-room, 57' 9"  $\times$  24' 5", is too long for its width.

"Tarella" has a good deal of merit, and does suggest an Institute building, and the detail is sound and free from crotchets, but the top storey is rather weak. Here, again, the meeting-room is too long for its width, and the staircase and landings not large enough. The perspective does not do justice to the design.

"Red Thistle," the only Gothic design, has an excellent set of drawings, and has fairly well grasped the subject. He gives us an Institute building, and in the days when Gothic was popular this design would probably have been given a high position. The plan is not of equal merit with the elevation, and three committee rooms about 11 feet wide on the second floor would not help his chance of success.

"Ad Finem" is another good set of drawings, and the perspective does better justice to the design than most of the others. The drawings show an accurate knowledge of detail, and the design altogether, without any trying for originality, looks sensible and practical, and just the kind of design that a client would be likely to build. Rustication, which is overdone in some of the other designs, is also used here, but it is kept within moderate bounds. If anything, the columns are a little too thin, and the pediments of the first-floor windows, as shown on the perspective, a little too prominent. The plan is fairly well worked out, but more importance might have been given to the entrance-hall and the staircase, the latter being top-lighted. The exhibition-room on the ground floor, with windows only in the ends, would not be too well lighted. The landings and passages on the first floor are too narrow—about 6 feet wide. Competitors, as a rule, have not seemed to realise the importance of a good entrance-hall and staircase, and wide landings and passages on the principal floor.

"Thor." To show the different views taken by competitors, I would mention that in this design the landings and passage on the principal floor are 11 feet wide. This is more like what it should be. There is also a good entrance-hall, the best of any. This is one of the few designs where the author seems to have seen the advantage of a good-sized hall and staircase and landings. The drawings are well done, and the design in composition and detail is good, whilst the delicate but effective perspective shows much skill in draughtsmanship.

"Fleur de Lys." At first sight this design appears too extraordinary—a kind of Alhambra—but on closer examination one finds it full of ability, both in draughtsmanship and design. True, it is not the popular architecture of the day; it rather recalls to one's memory the stones of Venice, with a dash of Oriental, a design that would warm the heart of Mr. Ruskin. There is a large amount of delicate detail, well drawn, and yet plenty of broad plain surfaces. The composition is excellent, and the corner tower would make a most effective feature. On plan the entrance-hall with its octagonal ends would be a good feature, but the landings and passages are, as usual, too narrow. I congratulate "Fleur de Lys" on a design that shows great ability, even if it is extravagant, according to our present-day ideas.

"Bow Bells" is a bold design, but rather heavy. The ground floor and first floor are simply treated in stone, and the centre portion, with its columns of the same materials, is quiet and effective; but the two large red-brick panels at the sides, with another at a higher level in the centre, would be too much even for an Institute of Architects. In execution the library would be much in need of a window in one of these blank wall spaces. The crush-room on the first floor is an excellent feature. I think this is the only design that introduces it.

I have remarked that some of the designs look better in elevation than they do in perspective. I think the reason for this is, that the true value of projection in its effect upon a



design is not thoroughly appreciated, and in perspective projection is shown, whilst in geometrical elevation it is not. A design in thoroughly good proportion in its surface sizes, as shown on an elevation, may be entirely altered and spoilt if the projections are wrong. On looking over the designs one is reminded that the rustic is still fashionable, and very often it is overdone. We have rustication in walls, in columns, in arches, in architraves, in lintels; we only want to go two steps further, and have rusticated cornices, and perhaps a rusticated figure in sculpture. After that the rustic will assume its proper place. I am quite sure of this, that if our students and others could study the early Renaissance buildings in Italy for a short time, when they came back we should find more proportion and refinement in their work, and less rustication.

#### THE GRISSELL GOLD MEDAL.

“Ebor” suggests a Band Stand of wood construction, the floor raised on a flight of steps continued all round, which would have a pleasing effect. The various parts are generally well designed, but the turned columns look more suitable for newel posts.

“Pan” is an effective design, simple in general lines, with little ornamentation, but a good deal of sculpture judiciously introduced. The simple treatment of the columns is good.

“Fore !!” is somewhat similar in outline to the last design, but here the columns are elaborately moulded and carved, and look more suitable for interior work; quite a contrast to the balustrade, which is quiet and good.

“Orpheus” carries simplicity too far, especially in the weather-boarded base extending from the ground to the platform level.

“Zampa” is a complete contrast to the last design, and is the most elaborate of all the designs submitted. The ornament in itself is good and carefully drawn, but it is almost over-ornamental. The design in outline and proportion is good, and the details of construction carefully shown are evidence of the work of an experienced designer, who has spared no pains in his work. “Cornet” and “Japan” are only conspicuous by their simplicity of design.

Very wide and different views must have been taken by competitors, for whilst some of the designs might be executed for 100*l.* or at most 200*l.*, others would cost ten times that amount. I conclude by congratulating the winners. I hope their success here may lead to further successes. To those who have not been fortunate enough to be placed first, I would say, The competitions of the future are as open to you as to the others, and the work you have done and the experience you have gained in these competitions make you all the stronger in design, and thus more likely to succeed in future competitions.

#### THE PUGIN AND OWEN JONES STUDENTSHIPS. By FRANK T. BAGGALLAY [F.].

The section which has fallen to me to review is the work in the Pugin and Owen Jones Studentship Competitions. This affords me an opportunity to express, by way of preface, the great regret I have for some time felt, and which I know is shared by other observers, in noting the growing tendency among students to neglect the wholesome discipline of sketching old buildings and making drawings of them from their own notes and measurements. I know the difficulty of choosing among the many studies the pursuit of which is supposed to be essential to the would-be architect; but there should be no difficulty whatever in putting the study of buildings themselves, especially of those whose beauties are acknowledged and have stood the test of time, in the foremost place; and there is no means of following such a study which can compare for a moment with drawing the objects themselves, and ascertaining, and recording on the spot, from measurement and observation, the dimensions and proportions of the parts and the effects which they produce. If any one doubt this, let him try the experiment of learning all he can about a building in some other way, and then let him only sit

down opposite it to make a sketch, and I am sure that in five minutes he will be convinced. A few years ago there was no need to insist on the importance of this study, and there are plenty of students who acknowledge it still; but that others despise, or at least ignore, the practice of sketching I am sure; and to all such I say, beware of adopting the attitude of the young writer who, on being asked if he had read a certain standard work, replied that he did not *read* books, he *wrote* them. It is not a question of making up pattern-books for future use; it is not even a question of acquiring a thorough knowledge of the architecture of the past, though that alone were no unworthy object; it is chiefly a question of *training*, of quickening the perceptions and refining the tastes, of teaching the eye to see and the mind to observe and compare, and of making the eye and the hand familiar with beautiful forms and proportions. Without such training it seems to me impossible that our work should have upon it that stamp of the cultured artist which we all desire to see.

That, as I said, there are still students left who practise the art of sketching, the drawings submitted for the Pugin Studentship are evidence. There are this year six sets. Two of them—those by Mr. Brewer and Mr. Swan—appear to me to be worthy of the traditions of the competition, while in a third set—Mr. Rickards's—are, among a good deal of rough and inferior work, several drawings of very exceptional merit, falling little, if at all, short of the best work submitted for the prize in past years.

Beginning with the first set on the left, by Mr. Cecil C. Brewer: his sketches, if not quite so strong as some work in this competition on former occasions, are nevertheless admirable. They are neat and workmanlike, the drawing is good, and the touch firm and confident. Essentials are all shown with care, and are not embarrassed or obscured by unnecessary lines and shadows, while the slight washes of colour are in many cases very useful. The two best water-colours, the sketches at Ipswich and Coutancy, are, I think, stronger in their way than the pencil-work; the colour is fresh and bright without being harsh, and the execution is easy. In each case I think the front of the picture would hold its place better if a little stronger in tone. The measured drawings are the least effective, but, though weak in appearance, are really most conscientiously and beautifully executed.

The next set of three strainers are witnesses to earnest endeavour, and one or two of the smaller sketches are promising; but the author should try to resist the temptation to use so much pencil in attempting strong and picturesque effects: his object is, or should be, the study of architecture, and not the production of pictures. It is, I imagine, to warn competitors against this error that in the instructions a note is inserted to the effect that "The Council attach special value to *untouched* perspective sketches *done on the spot*"—that is, as I read it, to work done, as far as can be judged, for the purpose of study, and not got up as pictures for exhibition.

In the case of the next set, the author has gone to the other extreme, and has been content with rather meagre line-work.

Mr. Rickards's work, which comes next, is that of a very strong and facile draughtsman. Several of the pencil sketches—unfortunately they are not the ones most in evidence—are exceptionally clever: I refer to the Florence fountain, the Pisa lectern, and the St. Mark's capitals. His very facility, however, seems to have betrayed him in other cases into an apparently impatient rapidity which it is difficult not to call carelessness. Mr. W. M. Carter's best and most useful drawing is the bay window at Welburn Hall. The other measured drawings represent good work, but the sketches are not above the average, and he seems to have cramped his style by the use of too small a sketching-block.

The very good studies submitted by Mr. James A. Swan seem all to have been made in Belgium in the course of three months last summer. The drawing is firm, generally



correct, and free from tricks and laboured effects; the execution appears rapid but is somewhat mechanical in effect, especially in the seven large views hung along the top of the screen. I, for my part, rather doubt the usefulness of studies of the sort at all, and certainly prefer the smaller and more businesslike sketches below. The most important and effective drawing, however, is the geometrical one of the front of "The Skipper House" at Ghent. I am not quite sure that the remark about the absence of tricks quite applies to this drawing, but it is certainly beautifully executed, and the effect achieved is good.

The Owen Jones Studentship has, as usual, attracted but few competitors. It is a pity that the one prize offered among architects for the study of colour should be so little sought after. Of the three sets of drawings exhibited, two—Mr. East's and Mr. Corlette's—are excellent. I prefer Mr. East's, but the subjects chosen for illustration are so different that comparison is not easy. Mr. East's colour is clean and bright and harmonious; his drawing of the figure is rather weak, but otherwise the execution leaves nothing to be desired. He has made no studies of English or Gothic work, which, perhaps, accounts for the absence of any harsh colouring. Mr. Corlette, on the other hand, has confined his attention solely to Gothic examples, and, interesting as they are, the colour is not in all cases pleasing. His handling of colour seems to me somewhat unequal, the drawings of Sant' Anastasia, Verona, and of the ceiling of the Lady Chapel at Chichester are very good, but there are others by no means equally so. The execution, apart from the colour, is unexceptionable throughout.

In conclusion, I cannot but express the hope that this prize will be better competed for in future; it does not seem to be generally appreciated what a powerful weapon, for good or evil, colour may become in the hands of the architect. Beside which, every year the use of coloured materials becomes more general, and it will not be long possible for the man who knows nothing of colour to avoid it as he has been in the habit of doing. Students should take warning in time and master it so far as they may.

#### THE MEASURED DRAWINGS MEDAL AND THE TITE PRIZE. By BERESFORD PITE [A.].

"Gylielmvs" has been successful in his access to and choice of a fine subject for the Measured Drawings Medal. The classic fronts of Hampton Court are sure to look well and impressive with moderate draughtsmanship, and during the present architectural mode there is much useful material acquired by learning its details for daily practice. The sketches and plottings submitted, upon which the drawings are built, are voluminous, and apparently have been collected during the past three years; they are as unsystematic and disconnected, and, I may add, as uninteresting, as such sketches usually are. There is a noticeable lack of full-size mouldings, some of half and quarter full-size being substituted. The finished drawings, consisting of the two main elevations and a plan and part section, and two half-inch scale details, are fairly drawn in their geometrical portions, but the freehand drawing of the carving and ornaments lacks refinement and feeling, while the pedimental sculpture disfigures its surroundings. The lining-in of the materials in the small scale elevation is carried out too hastily, and does not, as it may so easily, improve the effect by giving solidity and texture to the drawings, but the half-inch details are more free from this defect. The full-size details are insufficient and confused, and do not embody all the necessary matter, which is, however, to be found in their corresponding sketches.

"X."—The subject chosen is a fine old Lincolnshire church at Gedney, full of the variety of interest in traceries, arcades, and styles, with interesting carpentry and masonry construction, that characterises most old English country churches. The sketches are very scrappy and the plottings few, the measurements in many particulars being insufficient for reliable detail drawing. The drawings of such a subject should, in the hands of a thorough

student, become reliable data for the archæologist, but in this case it is difficult to trust the finished drawings upon some points of interest and note. The tower has a very beautiful Early English belfry storey below the later Perpendicular addition; upon the sketch of this charming early carved capitals are shown to the single columns subdividing the arches, which are omitted in the drawing, the columns being shown with bells. The early angle shafts to the tower buttresses upon the same sketch are shown with moulded bases and caps, and upon the drawings bases only without caps are shown. Upon the same buttresses interesting quatrefoil sunk panels are shown, with a quaint variety of which no trace can be found in the sketches. The geometrical drawings are clean and excellent in their neatness, and the details especially so, but they are mere fragments, without connection. The jointing shown on the drawings does not exist in the sketches. There is no long section showing the nave arcade.

“Sforzo.”—The Library of Trinity College, Cambridge, which is illustrated in this set of drawings, not only has the interest of being externally a classic design of great majesty and power, by Sir Christopher Wren, but of possessing an interior of equal beauty and dignity. It is an ideal library interior to the architect, well lit, lofty and spacious, the bookcases arranged with artistic effect and pleasant in their low wood-colour, with quaint busts standing upon them, imparting a very piquant effect suitable for such a storehouse of treasured wisdom. The sketches submitted are rough, but the full-size mouldings are businesslike. The geometrical drawing is clear, but without interest or power, and the freehand work fails. The detail suffers from being drawn on inferior paper. The full-size drawings of mouldings are bold but confused.

Coat of Arms (device). Charter-House.—This set consists almost entirely of a survey plan of the irregular courts and buildings of this charming corner of Old London. The hall or chapel, which would repay careful study and measurement to a large scale, is here only shown very imperfectly. The elevations showing random roofs and walls, and the sections, have much work but little usefulness in them, the points of interest being undeveloped.

Students should bear in mind that the relationship their measured studies have to the actual buildings is exactly similar, though reached by an inverse procedure, to the plans, working drawings, and details which are needful for the erection of a similar work of architecture. System and clearness should be as present in the sketches and drawings as in the finished show-drawing. I would venture to recommend that the full-size details be taken first, and sketched and plotted in such a manner as not to require re-drawing. With these in hand, a column or two of horizontal and vertical dimensions will enable the half-inch scale detail drawing to be set up, having the worked-out thoroughness that will enable a mason or craftsman to build a replica without the original model. With this matter produced, and everything being drawn to a large scale for which a workman would require a detail, either constructionally or decoratively, the small scale plans and elevations giving the relations of the several parts can be satisfactorily completed. Measured drawings must be thorough. Sketches are only sketches, and satisfactory architecture or measured drawings cannot be produced from sketchy sketches. Let every measurement taken have an object, and accomplish it with accuracy. Examine Mr. Penrose's reproductions of his plottings and measurements in *The Principles of Athenian Architecture*, if you have any wish for a lofty and scientific ideal of measured drawings.

The subject of the Tite Prize Competition, being the design of a stone bridge over a wide river, possesses an appositeness that should impart an element of public interest to the consideration of the drawings; and with some reservations that may become apparent, we may congratulate the Institute upon the exhibition of designs. Several of the designs submitted,



if executed, would certainly be no disgrace to any city blessed with such a river as we have in London, or as Dublin has in the Liffey.

The requirement that the bridge should have the character of a national memorial perhaps needed some fuller definition, in order to secure satisfactory consideration on the part of the designers, it being a matter of obvious difficulty to reflect enthusiasm for anonymous heroes or potentates in monumental architecture. Our national phlegmatic indifference to mere greatness and our want of instinct for the monumental quality in fine architecture are evident enough in the designs exhibited, no one competitor having satisfactorily combined an expression of national wealth and glory with good monumental architecture, or either element with a satisfactory bridge. We must pronounce the competition a failure, and a predestined failure, too, in the production of a design fit for any purpose of national memorial, and proceed to examine what remains of the designs from the utopian standpoint of a County Council in search of a good bridge design. The designs are now passed under review without any intention of using their order as one of merit.

"Australis."—This design can be briefly described as London Bridge-like. The river is spanned by seven elliptical arches, and the adjoining embankments with smaller ones. The construction is apparently good: it is fully and attractively shown on the detail sectional drawing. The planning of steps to the embankment is satisfactory. Architecturally the style of treatment adopted does differ from its prototype, but is manifestly inferior in refinement, in grace, and in sense of line. The line of the bridge itself, that is, the æsthetic value of the two gradients as shown in the main cornices and parapets, has not in this case the slightest architectural value. Any beauty that the two slowly ascending gradients might possess is lost, and apparently there is a ridge at the centre of the bridge to divide the counties, the break of line being emphasised in elevation by a lamp pedestal. The horizontal tops of the great piers, which break the gradients of the cornice unavoidably, are also emphasised by a further break in the design of the parapet; and by the elevation of the central piers into lofty pedestals for recumbent lions, all possibility of a continuous and satisfactory line across the river is destroyed. The pedestals for sculpture at the entrances are well placed and suitable, and the lamp-posts are shown in the correct position. The architectural detail is commendably simple, but the cornice and parapet are both short and thick in their proportions, the latter, which is a balustrade, being very dumpy. The open-arched return piers to the embankments are a mistake, solidity and mass being required in that position. The draughtsmanship is clear and strong, but fails in artistic feeling, and a bird's-eye position for a perspective of a bridge is a mistake. The second-hand sculpture that is shown mars the drawings, the architect's proper direction of such work being misapplied in making the groups and recumbent lions turn their backs on the world and city, and face each other in antagonistic pairs.

"Perseverando."—In this design the added requirement of the conditions for a national memorial is dealt with by adding to a simple bridge design certain features of a monumental character, for the sake of added dignity and picturesqueness. Four entrance archways to the embankments below flank the approaches to the bridge, and upon each pier are placed small domed pavilions. This treatment is logical, and fails only because of the detached character of the various features which do not collectively add value to the design. Constructionally, this design is unobjectionable; the planning of the roadway is unimpeded, but the subway connecting the embankment, with the refuge in the roadway over for lighting, is too small and dark. The effect of the stairs at the junction of the bridge with the shore is somewhat confused. The drawings do not show sufficient constructional details, and evade the solution of the main problems connected with carrying the roadway upon the piers.

Architecturally, the design of the bridge itself is excellent, and possesses a distinct grace and beauty of its own. The lines of the gradients have been softened at their junction between the centre piers, and are blended in a subtle curve, I hope intentionally, with a very successful result. Shorn of its pavilions, which do not, however, seriously interfere with the general effect, the breadth of effect, the beauty of the line with which the banks are united, and the justness and simplicity of the proportions of its seven segmental arches entitle this design to the highest praise. It has also a recognisable Italian feeling in harmony with the traditions of the competition. The architectural detail is fair, the draughtsmanship clean and sufficient, the perspective from the river-level artistic and delicate. It is seldom that students' designs have such a distinguished breadth and simple sense of beauty as this set of drawings displays.

“From Bank to Bank.”—This is a good plain bridge design, all attempt at any other expression of national recollection than that of sheer utilitarianism being abandoned, and all architectural details and forms are reduced to a minimum. The general line is good; the seven arches are frankly segmental with simple channelled voussoirs. The piers are obliquely placed to the stream and bridge, a satisfactory adaptation of the mediæval plan, and are sloped backwards buttresslike, perhaps with a somewhat exaggerated force. The cornice is a simple table carried upon moulded brackets, without other supporting members, and is original and satisfactory in effect. The design is marred by the awkward corbelling of semi-octagonal recesses from the footway upon the head of the piers. The plan of the piers, however, would probably render any proper termination a matter of some difficulty. Steps to the embankment descend frankly and boldly at right angles from the footway. The draughtsmanship is clear and good. The perspective is taken from the embankment, and has no beauty of effect.

“Calypso” is a bold scheme for crossing the river with five arches, the centre one having a span of about 130 feet. The arches are bad in shape, being that mongrel type of semi-ellipse which is produced by the use of three segments. The piers have small projection, and are semicircular on plan. Triumphal arches are placed across the roadway at each end, having an elliptical arch over the road and semicircular ones towards the embankment. The general line is good, the junction of the gradients being effected by a line of three planes, but the architectural elements and details are poor. The arch-mouldings, the rustications, and cornice are thin, and the parapet the reverse. Undesirable winding steps are placed to the embankment. Chariots and horses upon the piers with their backs to the bridge and their action towards the river seem unsuitable. The draughtsmanship is poor, especially in the freehand work.

Halfpenny Stamp (device).—This design is boldly original in its architectural character, but original without the power of goodness. Distinctive monumental character is imparted to it by four pavilions at the entrances, each of two storeys crowned by a group of domes. Staircases within give access to belvideres; wide flanking steps are provided to the embankment. The river is spanned by seven elliptical arches, having no other treatment of their voussoirs than small alternating rustics, but each arch has a carved keystone. The piers are cut away to provide ornamental features and sculpture, and the centre piers are squinched outwards and widened above. The cut-waters to the piers are prow-shaped and of good form, imparting great character to this part of the bridge. The perspective is pleasantly tinted in sepia, but makes the mistake, also noticeable in other drawings, of failing to show light through the arches of the bridge. The design has an Indian flavour, and maintains, with reservations as to its architecture, a certain monumental character.

“Pons Asinorum.”—This design departs from simplicity in the treatment of the arches by providing an inner drop arch in each bay of a fuller segmental curve, producing an effect that would be picturesque in a tower watergate, but which destroys the breadth and depth of



effect so valuable in a bridge. Large semicircular recesses are formed in each pier for sculpture, with an arch semicircular both on plan and elevation above, forming a mere canopy, and thus giving an impression of weakness. Bronze groups are placed in the piers above the water-level. Nautical columns appropriately carry lamps above the piers. Great triumphal entrances are placed at each end, greatly narrowing the roadway and forming bold obstructions. Extensive embankment approaches and water stairs are shown, and the whole treatment of the shore end has been well considered. The lines of the gradients simply meet each other in the centre. The cornice has the unusual feature of a frieze and small fascia below. The drawings are clear and good, but the architecture of the triumphal archways is unworthy.

"Red Star" (device) employs nine elliptical arches, and inserts a shallower drop arch under the roadway to carry the mains; the lamp-posts are therefore placed in the centre of the roadway, as in St. Pancras, and are spaced out without reference to the piers and arches, which is a mistake. The general line of the gradients in the parapet is boldly tilted up at the point of junction over the centre arch, and the cornice is broken by a semicircular head to a canopy over the keystone, all of which is unsatisfactory in treatment. The piers are original, being plain semi-octagons on plan, the cornice of the bridge being stopped into their splayed sides. The centre piers are carried up for sculpture. The entrance is ramped on plan with circular sweeps, giving increased width for access, which is desirable. The cutwaters are suitably prow-shaped, but the standing figures and canopies upon them around the piers are evidently out of place.

"Ponte."—The river is crossed by nine arches, a pair of arches, semicircular shape, being provided at either shore. Whatever advantage this may afford, by increasing the height under the bridge at the banks, is counterweighed by the æsthetic loss of continuity and strength to the whole bridge. The design generally is very elaborate and over-ornamented, the parapet being broken up over every arch, as well as by a number of dwarf obelisks; the piers are crowned with domed pavilions, and afford further opportunities for the use of detail. The entrances are well planned, with convex colonnades terminated by pavilions and monumental pedestals, the steps to the embankment being designed behind the columns. This portion of the design is well thought out, and good, if not grand, in conception. But the whole is overdone with detail, while the constructional details are meagre.

"Avenel" provides four monumental tourelles at the entrances, recessed from the line of the pathway. The general line has been well considered, and the effect is good. Nine segmental arches are employed, and are rather small in effect. Each pier is partly square, partly oblique, and partly circular on plan, and the effect is therefore broken and weak. The tourelles might be monumental and good if their architectural proportions were improved; the other details are simple and fair. The draughtsmanship is good, and the perspective sketch of a portion strong in effect.

"The Owl" uses seven segmental arches, with shallow semicircular piers. The architecture is elaborate, but applied. Columns are clustered around the piers, and the spandrels of the arches are sunk and ornamented. There are no features to break the lines, and the general ornamental character has been relied upon for effect. This is, however, lacking in beauty and feeling. The section is elaborately figured.

It will be found, upon a general review of the students' designs, that those authors have been most successful who have recognised that in the purpose of a bridge lies a poetic beauty itself sufficiently expressive to need only the simplest means for architectural realisation. A great arch doing a great work is a poem in itself, and a number of great arches, each varying in a progressive series, and springing from piers well founded in an ever-moving river, supply a motive for restrained and sympathetic enthusiasm in design seldom to be found in pro-

fessional practice. Happy, and to be envied, are the students who have been enabled to devote long and eager hours to the construction of this delightful castle in the air. *Labor ipse voluptas!* Architecture bestows her own rewards lavishly, and without those irritating limits and considerations which suggest and compel all human selections.



9, CONDUIT STREET, LONDON, W., 23 January 1896.

## CHRONICLE.

### PRIZES AND STUDENTSHIPS 1896.

#### The Fifth General Meeting: The Deed of Award.

GENTLEMEN,—Pursuant to the terms of the By-law 66, that the Council shall, by a Deed or Writing under the Common Seal, award the Prizes and Studentships of the year, and announce such awards at the next General Meeting after the adjudication, the Council have the honour to state that they have examined the several works submitted for the two Silver Medals of the Royal Institute, the Soane Medallion, the Pugin and the Owen Jones Studentships, the Godwin Bursary, the Tite Prize, the Grissell Medal, and the Aldwinckle Studentship.

#### THE ROYAL INSTITUTE SILVER MEDALS.

##### (i.) *The Essay Medal and £26. 5s.*

Eight Essays were received for the Silver Medal, under the following mottoes:—

- |               |                 |                     |
|---------------|-----------------|---------------------|
| 1. John Bull. | 4. Conditioned. | 7. Research.        |
| 2. Floruit.   | 5. Lotus.       | 8. Non Nobis Solum. |
| 3. A Priori.  | 6. Caber Feidh. |                     |

The Council have awarded the Silver Medal and Twenty-five Guineas to the author\* of the Essay bearing the motto "A Priori"; a Prize of Books of the value of Five Guineas to the author† of the Essay marked "Conditioned"; and a Certificate of Honourable Mention to the author‡ of the Essay marked "John Bull."

##### (ii.) *The Measured Drawings Medal and £10. 10s.*

Four sets of drawings were sent in, of the several buildings enumerated and under motto, as follows:

1. "Sforzo":—The Library of Trinity College, Cambridge.
2. "Gvlielmvs":—Hampton Court Palace.

3. "X":—Gedney Parish Church, Lincolnshire.

4. Coat-of-arms (device):—The Charter-House of London.

The Council have awarded the Silver Medal and Ten Guineas to the delineator\* of Hampton Court Palace, a set of drawings submitted under the motto of "Gvlielmvs"; and a Medal of Merit with Five Guineas to the delineator† of Gedney Church, a set of drawings submitted under the motto of "X."

#### THE TRAVELLING STUDENTSHIPS.

##### (i.) *The Soane Medallion and £100.*

Seventeen designs for an Institute of Architects were submitted under the following mottoes:—

- |                           |                              |
|---------------------------|------------------------------|
| 1. Fleur de Lys (device). | 10. Thor.                    |
| 2. Tarella.               | 11. Compass.                 |
| 3. "Fleur de Lys."        | 12. Cadmus.                  |
| 4. Bow Bells.             | 13. Green Dragon.            |
| 5. The Dun Cow.           | 14. Mightier than the Sword. |
| 6. Ad Finem.              | 15. Progress.                |
| 7. L'Espoir.              | 16. Royal.                   |
| 8. Pseudonym.             | 17. Red Thistle.             |
| 9. B (in circle).         |                              |

The Council have awarded the Medallion to the author‡ of the Design bearing the motto of "Ad "Finem," with the sum of One Hundred Pounds for architectural study abroad, during a period of not less than six months, under the specified conditions. They have also awarded a Medal of Merit to the author§ of the Design bearing the motto of "Thor"; and a Certificate of Honourable Mention to the author|| of the Design bearing the motto of "Bow Bells."

##### (ii.) *The Pugin Medal and £40.*

Six applications were received for the Pugin Studentship from the following gentlemen:—

1. Ernest Charles Henry Bird (York).
2. Cecil Claude Brewer.
3. William Morris Carter (York).
4. Edwin Morecombe Hick (Bath).
5. Edwin Alfred Rickards.
6. James Alfred Swan (Birmingham).

The Council have awarded the Medal and (subject to the condition, among others, that the said candidate devote a tour of not less than eight weeks' duration in some part of the United Kingdom to the study of Mediæval Architecture) a sum of Forty Pounds to Mr. Cecil Claude Brewer.

##### (iii.) *The Owen Jones Certificate and £50.*

Three applications were received for the Owen Jones Studentship from the following gentlemen:

\* Hugh P. G. Maule [*Probationer*]. † C. Wontner Smith [*Probationer*]. ‡ R. Shekleton Balfour [A.]. § John Anderson [A.]. || Edwin Alfred Rickards.

\* Banister F. Fletcher [A.]. † John J. Cresswell [A.].  
‡ Edward Albert Jollye.



1. Hubert Christian Corlette [A.].
2. Hubert Springford East [A.].
3. John Frederick Fogerty [A.], Bac. Eng. (Bournemouth).

The Council have awarded the Certificate and (subject to the condition, among others, that the said candidate devote a tour of not less than eight weeks' duration to the improvement and cultivation of his knowledge of colour as a means of architectural expression) a sum of Fifty Pounds to Mr. Hubert Christian Corlette [A.].

(iv.) *The Godwin Medal and £40.*

Four applications were received for the Godwin Bursary, from the following gentlemen \* :

1. Robert Stephen Ayling [A.].
2. Alexander Nisbet Paterson [A.], M.A. (Glasgow).
3. George Alexander Thomas Middleton [A.].
4. Ernest William Malpas Wonnacott [A.], P.A.S.I.

The Council have awarded the Medal and (subject to the condition, among others, that the said candidate spend not less than five weeks in some part of America or Europe, other than Great Britain and Ireland, for the purpose of studying and reporting on works of modern architecture) the sum of Forty Pounds to Mr. Alexander N. Paterson [A.], M.A.

(v.) *The Tite Certificate and £30.*

Ten designs for a Stone Bridge were submitted under the following mottoes :—

- |                                     |                            |
|-------------------------------------|----------------------------|
| 1. $\frac{3}{4}$ d. Stamp (device). | 6. Avenel.                 |
| 2. Perseverando.                    | 7. Calypso.                |
| 3. Ponte.                           | 8. Pons Asinorum (device). |
| 4. From Bank to Bank.               | 9. The Owl.                |
| 5. Australis.                       | 10. Red Star (device).     |

The Council have awarded the Certificate and (subject to the condition, among others, that the said competitor, after an absence of not less than four weeks, shall submit satisfactory evidence of his studies in Italy) a sum of Thirty Pounds to the author † of the Design bearing the motto "Australis."

PRIZE FOR DESIGN AND CONSTRUCTION.

*The Grissell Medal and £10. 10s.*

Nine designs for a Polygonal or Circular Band Stand were submitted under the following mottoes :

- |                              |             |            |
|------------------------------|-------------|------------|
| 1. Accoustic ( <i>sic</i> ). | 4. Ebor.    | 7. Japan.  |
| 2. Zampa.                    | 5. Orpheus. | 8. Cornet. |
| 3. Fleur de Lys (device).    | 6. Pan.     | 9. Fore !! |

The Council have awarded the Medal and Ten Guineas to the author ‡ of the Design bearing the motto "Zampa."

THE ALDWINCKLE STUDENTSHIP (Value £50).

The Council, having decided to award the Studentship for the year 1896 to the person who, among all those submitting works for the Prizes

and Studentships 1895-96, will, in their opinion, best carry out the donor's intentions—this Studentship being due to the munificence of Mr. T. W. Aldwinckle [F.]—have selected Mr. H. S. East [A.], provided necessarily that he fulfil the required conditions as to travel and study in Spain for a period of not less than eight weeks.

THE ASHPITEL (EXAMINATION) PRIZE.

The number of persons who qualified for candidature as Associate at the March and November Examinations of the year 1895 was sixty-one; and under the terms and conditions of the Ashpitol Prize it is to be awarded to "such candidate in" the Obligatory Architectural Examination "as shall have most highly distinguished himself in such Examinations held in the course of a year, and who is reported by the Board of Examiners as deserving such prize. But the Board have reported that during the past year none of the sixty-one successful candidates has distinguished himself sufficiently to deserve the Ashpitol Prize, which is a Prize of Books value Ten Guineas; and they have recommended the division of that amount between two candidates whose names they have reported. The Council have consequently awarded a Prize of Books value Five Guineas to Mr. Geo. J. Thrift Reavell [A.] and Mr. W. Chas. Waymouth [A.] respectively.

TRAVELLING STUDENTS' WORKS IN 1894 AND 1895.

*The Tite Prizeman 1894.*—The Council have approved the work of Mr. Alexander Robert Hennell [A.], who was awarded the Tite Prize in 1894. Mr. Hennell left in March 1895 and returned in May, having visited Genoa, Siena, Viterbo, Rome, Florence, Venice, Verona, Milan, and Pavia.

*The Soane Medallist 1894.*—Mr. J. H. Tonge, who was awarded the Soane Medallion in 1894, and who selected parts of Holland and Germany for the scene of his tour, was unable to comply with the conditions which would entitle him to the second moiety of the sum of £100.

*The Soane Medallist 1895.*—The Council have approved the work executed by Mr. H. S. East [A.], who was awarded the Soane Medallion in 1895, and who travelled in Italy.

*The Pugin Student 1895.*—The Council have approved the work executed by Mr. Alfred J. Dunn [A.], who was elected the Pugin Student of 1895, and who travelled in the counties of Hereford, Gloucester, and Worcester.

*The Owen Jones Student 1895.*—The work executed in Sicily and other parts of Italy by Mr. Joass [A.], elected the Owen Jones Student of 1895, has met with the Council's unqualified satisfaction. Its excellent character has induced them to make special mention of it, and at the same time to offer Mr. Joass their hearty congratulations on the results of his travel and study.

In witness whereof the Common Seal has been

\* A fifth application, supported by a testimonial, was also received, but it was unaccompanied by any "selection of" "practical working drawings, or other evidence of special" "practical knowledge." The applicant was Mr. Francis Masey [*Soane Medallist 1887*]. † Henry A. Crouch [A.].

‡ James Humphreys Tonge (York).

hereunto affixed this thirteenth day of January 1896 at a Meeting of the Council.—F. C. PENROSE, *President*; ASTON WEBB, *Vice-President*; WM. EMERSON, *Hon. Secretary*; EDW. A. GRUNING, JOHN SLATER; and WILLIAM H. WHITE, *Secretary*.

#### The Sixth General Meeting: The Presentation.

The General Meeting held 20th inst., which was well attended, was enthusiastic in its reception of the Chairman's Address, the Critical Reviews, and lastly, though not least, the students who had come from various parts of the country to receive the honours awarded to them. The drawings executed by the Tite Prizeman of 1894, the Soane Medallist, the Pugin Student, and the Owen Jones Student of 1895, during their respective tours, which were hung in the meeting-room, will remain on exhibition until 9 p.m. on Monday, 27th inst.

#### "The Architectural Literature of France" [pp. 145-157].

In a recent article reference was made [p. 150] to Mr. John J. Cole's gift of a quarto edition of Serlio's "Architecture," published at Venice in 1619, which contained MS. notes, and possessed in itself a history. Mr. Cole has now presented to the Library a rare quarto edition of Alberti's *L'Architettura*, published at Venice in 1565. Mr. William A. Pite [F.] has also presented a book of twenty-four plates by the Florentine Bartolommeo Rossi, entitled *Ornamenti di Fabriche antichi et moderni dell' Alma Citta di Roma*. The last plate bears the date of 1594, and the frontispiece that of the "year of jubilee" 1600. Both books, which are in their original bindings, are welcome acquisitions, and similar benefactors will confer a like favour by presenting a copy of any edition of *De Re Aedificatoria*, as Alberti wrote it, in Latin; and as it appeared in Florence towards the close of the fifteenth century. In the Bibliography, with which the article referred to terminated [pp. 156, 157], the fact that the asterisk prefixed to the title of a book indicated that it was not in the Institute Library was omitted to be stated.

## REVIEWS. XXXVII.

(101)

### GEOMETRICAL DRAWING.

*Note-book on Plane Geometrical Drawing, with a Chapter on Scales, and an Introduction to Graphic Statics. By Robert Harris, Art Master at St. Paul's School. New edition, revised and enlarged. Fcp. 8o. Lond. 1895. Price 3s. 6d. [Messrs. George Bell & Sons, York Street, Covent Garden, W.C.]*

*Science and Art Drawing: Complete Geometrical Course, consisting of Plane and Solid Geometry, Orthographic and Isometric Projection, &c., &c. By J. Humphrey Spanton. 8o. Lond. 1895. Price 10s. net. [Messrs. Macmillan & Co., 29-30, Bedford Street, W.C.]*

Nothing but admiration is due to students who, with no previous mathematical training, and with no assistance beyond that afforded by the

ordinary textbooks, succeed in passing examinations in geometrical drawing. The ordinary textbooks consist of collections of problems, the ultimate object of which is the construction of a certain figure; and rules based on Euclidean principles are given for the solution of such problems, without the least hint of a reason for them, or a demonstration of their correctness. Each problem becomes an isolated item, to be committed to memory by rote; and if a link in the chain of construction be forgotten, there is nothing to guide the student to its recollection. The two books under notice do not differ in this respect from others of their class; but they differ considerably from each other in scope and character.

On the whole, it is to be feared that Mr. Harris's book cannot be recommended. It is a handy little volume, laid out on a good plan; and a careful student, fortified with a knowledge of the principles of pure geometry, could no doubt gain some assistance from it in preparing for an examination; but a student of ordinary intellectual attainments would most likely be hopelessly puzzled by it, and a negligent student very apt to be led astray. After a few sound, though trite, "introductory hints" on drawing and the use of instruments, the author gives a collection of sixty "definitions." Some of these are open to criticism. No. 5, "A vertical line is upright," for all the information it imparts, might as well be stated "an upright line is vertical." In No. 13 we read, "Any one side [of a triangle] may be called the base"—which the author certainly does not regard as true in the case of the isosceles triangle (*cf.* Props. 20, 21, page 16). No. 17, "A right-angled triangle has one angle equal to a right angle," is oddly expressed. No. 45 is not a definition at all, but a statement of Euclid III. 31. More serious than the sins of commission are those of omission: notwithstanding the large number of definitions in this table, many technical terms are used in the course of the book for definitions of which one looks vainly. Even in the table of definitions the words "subtend" and "right figure" (whatever that may mean) are employed without adequate elucidation; while later on we find "harmonical division," "harmonic mean," "ordinate," "abscissa," "parabola," "ellipse," "major and minor axes," "hyperbola," to explain any of which the student is left to his own resources.

Geometry is a mathematical subject; and, though Mr. Harris does not profess to teach mathematics, we have a right to expect the definiteness and accuracy of expression for which that science stands pre-eminent. In Prop. 7 we are required to "measure the length of an arc," but no directions are given for effecting that operation. Prop. 10 tells us how to "divide a space contained (!) between two parallel lines." Some of Mr. Harris's methods appear rather clumsy. Thus, according to him, the simple proposition, "From a point taken anywhere between



"two converging straight lines to draw a line "making equal angles with them," requires a portentous figure involving six straight lines and nine circular arcs. This may be good drawing, but it is very bad geometry. Mr. Harris has had the happy thought (as an examination of the figures seems to show) of indicating points assumed *ex hypothesi* by letters, constructed points by numbers. The increased number of available symbols ought surely to have obviated the necessity of giving such confusing directions as "Draw "line 2, 3 parallel to 1, 2"—two points being indicated by the figure 2. There is a serious omission in Prop. 24, "To find a point equidistant from the corners (!) of a triangle." We are told—

Bisect two of the sides by lines meeting in point O. Point O is equidistant from the corners of the triangle.

As we are not told that the bisecting lines must be at right angles to the sides, it is clear that *any* point, within or without the triangle, would satisfy the solution as here given. Prop. 27 supplies us with another awkward ambiguity; it is required to "draw a right-angled triangle, two sides AB, "2½ inches, and BC, 1 inch, being given." We are left to deduce from the solution that AB is the hypotenuse. A very different triangle would of course be obtained were AB one of the other sides. Prop. 38 postulates ability to draw the tangent to a circle at any point of its circumference; but we are not told how to do this till Prop. 53.

This portion of the work improves, however, as we advance. A large section is devoted to inscribed and circumscribed figures of various kinds, and the construction of equal areas. A few elementary problems on the conic sections lead us to a section on cycloidal curves, which is headed by definitions of the cycloid and the trochoid with their varieties. But Problem 4 of this section is "To draw the 'chonchoid'" (*sic*), and Problem 5 is "To draw the cissoïd": one has to discover from the solutions what these curves are, and also what the pole of a conchoïd is. A useful little chapter on scales follows, preceded and followed by good collections of examples, principally selected from examination papers. In the next chapter, on "Geometrical Pattern Drawing," Mr. Harris is on firmer ground, and produces some very pretty figures by mathematical means. Chapters on Graphic Arithmetic and Graphic Statics, with a small muster of examples, conclude the book. In preparing future editions of his textbook, Mr. Harris should submit it to the revision of a mathematician; after undergoing this treatment it might take a very good place among treatises on geometrical drawing.

Mr. Spanton's goodly volume, viewed as a treatise on geometrical drawing, is excellent, and gives everything that a student would be expected to require for the examinations which it contemplates.

It is no mere elementary introduction, but a good solid treatise on the subject, entering fully into its more abstruse branches, such as the projection of shadows and interpenetration. Faults of detail as well as of principle are not wanting, however; but these could easily be removed with a little care. In Prop. 15, for instance (an ingenious approximation, by the way, to that ancient Will-o'-the-wisp, the trisection of any angle), we find a sad lack of uniformity in the directions, "Join A "and C," "Join EI," "Join J with B," all of which indicate the same operation. Again, on p. 29 we have, "On the point A as centre," "From A as centre," and "With A as centre." Surely Mr. Spanton might have spared his readers the dreadful hybrids "duodecagon" and "hepta-foil." A good many errors in strict mathematical accuracy may be noticed—*e.g.* the statement, "Tangents drawn to any three circles of different "diameters all meet in the same straight line"—in which it should be made clear that every pair of tangents is common to two of the circles. Problem 77, as stated, is an impossibility, analogous to the old crux concerning the smallest number of colours necessary to tint a map—"About a given circle A to describe six circles "equal to it *touching each other* as well as the "given circle." The reviewer had marked several similar blunders, but space prevents their being detailed at large: these will serve as examples. The pruning-hook of a mathematician would be useful in this case also. Further, in a work that professes to teach drawing at least quite as much as geometry, one would look for more artistic figures. They are generally accurate, but many are ungraceful, and nearly all are spoiled by ugly lettering; there is an unpleasing variation in the thickness of line employed; and some—notably fig. 108—are as glaringly "cooked" as ever were the productions of a schoolboy. The following direction—

Do not stick pins into the middle of the board, because the points of the dividers are liable to slip into them (page 3)—

reads like a production of that interesting figment, the conventional stage Irishman.

These, however, are superficial faults, easily allowed for by the reader, and do not detract seriously from the merits of Mr. Spanton's book as a whole.

R. A. S. MACALISTER.

(102)

## THE SCULPTURED STONES OF ISLAY.

*The Carved Stones of Islay.* By Robert C. Graham, F.S.A. Scot. (of Skipness). 4o. Glasgow 1895. Illustrated with 100 engravings, chiefly on copper. Price 31s. 6d. [Messrs. James MacLehose & Sons, Publishers to the University, Glasgow.]

The western highlands and islands of Scotland have been, from time immemorial, a rich field, not only for the secular or ecclesiastical historian, but

for the archæologist and the poet. Wave after wave of race has there left a marked deposit on the accumulated strata of time—in mythic legend, in monumental or architectural remains, or in written history. Scattered over the whole shores of Britain, including the Scottish Western Highlands, we first find the vestiges of the old Cave-dwellers. Then follow the evidences of that race to which are attributable the great unhewn stone monuments called Druidical remains—fabrics of supposed religious or political purpose. Next comes the era of sculptured stones, when the warrior, the huntsman, or the disciple of Christianity is recorded in effigy or by inscription. It appears that the habit of sculptured memorial stones, originally pagan, adapted itself to Christian faith and hope. The method of perpetuating the memory of the dead remained the same, the change in the symbolic sculpture showing, however, the great bound which had been made from pagan superstition to acknowledgment of Christian revelation.

Mr. Graham has produced a very attractive book—beautifully printed and illustrated, and rendered more interesting and valuable because the particular work of the volume is preceded by a descriptive epitome of the general and individual history of the Western Isles and their adjacent mainland. It is true that Pennant, Stuart, Drummond, and others visited, described, and delineated the principal and most striking objects under the head of Sculptured Stones, not only in Islay, but throughout Scotland; but Mr. Graham, by devoting his work solely to the Sculptured Stones of Islay, and accompanying that work with the local history beforementioned, and with maps, and routes, and topographical description, has done unique service to the antiquities of Islay, and to the recorded matter of that period of Scottish history in which sculptured stones form so large a part of the corroborative evidence of common tradition. Mr. Graham's minute description of the lesser stones and of the *disjecta membra* of others has done much to localise and contemporise the various types exhibited in these sculptures, and to preserve the fading memorials of bygone generations. I have high authority for believing that the sculptured stones of Islay belong entirely to the Christian epoch. Though they are, in respect of the larger specimens, essentially of the same type, they vary in localities as regards form, ornament, and excellence of device according to the ability, invention, and skill of the individual sculptor. The same authority leads me to believe that the smaller stones are but the marks of the humbler burial-places—more numerous and similar to each other where the ancient population has been thickest. But this adds interest to Mr. Graham's work, for in it we have, not only the Westminster Abbey, but the parish churchyard monuments of the far-off times of Islay.

These ancient stones relatively to each other resemble those which may be seen in any great burial-ground of the present day, where the great, the famous, or the wealthy are recorded in sumptuous edifices, bestowed by admirers, or purchased by their heirs, and which also contain the devout but humbler tributes of the personal affection of the poor.

In common with man's handiwork in all ages destruction may casually overtake these sculptured stones; effacement must eventually be their lot, although, no doubt, such attention bestowed upon any monumental relics as that which archæologists have bestowed upon the sculptured stones of Islay must not only perpetuate their memory, but protect their duration *in situ* to the longest possible period. It is therefore gratifying to know that by such works as Mr. Graham's the whole sculptured stones of Islay have been placed in a single volume, and that future generations will find these stones, great and small, in actual portrait and distinct locality, whatever may have happened to the crumbling sculpture itself. He has done for Islay what others might do for all our parish burial-grounds or cathedral precincts—put down a complete record of what is there at present. Nothing more interesting could be done than for all parish ministers to make an inventory and description of the monumental remains within their parish bounds, and for the custodiers of every cathedral church or public edifice containing monuments, effigies, or portraits to do the same.\*

Following up the labours of Pennant, of Stuart, and of Drummond, Mr. Graham has, after their great feast in Islay, gathered up the fragments that remained, so that nothing should be lost. If his book draws to these enchanting scenes new visitors, his would be the praise and theirs a pure and high reward. Knapdale, Islay, Iona, and Oronsay are treasure-houses of what lent nobility and sweetness to the troubled life of mortal man in distant ages, and contain the undoubted index to the sources of the national success of the Scottish people. These were the legendary lands of Fingal—the historic lands of St. Columba, of the Vikings, and of the great Scoto-Celtic race when that race was greatest; and to their monuments we can fitly apply the words of Ossian:—

“Beside the fount of mossy stones the weary  
“heroes rest. The tear steals in secret from  
“Annir. He broke the rising sigh: ‘Here darkly  
“‘rest,’ the hero said, ‘the children of my youth.  
“‘This stone is the tomb of Ruro; that tree  
“‘sounds over the grave of Argon. Do ye hear  
“‘my voice, O my sons, within your narrow  
“‘house? Or do ye speak in the rustling leaves  
“‘when the winds of the desert arise?’”

Glasgow.

JAMES GRAHAME.

\* I speak feelingly, because I am aware that mural tablets and other monuments fall too easy victims to the improvers (!) of such buildings.—J. G.





## THE ADMINISTRATION OF ART IN FRANCE. I.

By ANTONIN BARTHÉLEMY, Delegate of the  
Ministère des Beaux-Arts, Paris.

They say in France—The administration of the *Fine Arts*. It is an expression of which I never make use, because I consider it to be a very silly one. Art is art. It is a matter of inspiration and of technics, not of the material used. How can any one contend seriously that there are arts which have the privilege of being fine, and others the infirmity of not being so? But as we speak of France, we will say the *Fine Arts*. Let us be above everything accurate.

One of the eleven Ministries which in France are entrusted with the administration of the country is the Ministry of Public Instruction and Fine Arts. The official work of the department is in the hands of a certain number of directors, and there is a Director of Fine Arts who enjoys a greater amount of independence than his colleagues. But the direction of Fine Arts, which has lately undergone a change of far-reaching importance, has had a very strange fortune, which almost reads like a novel, and throws a considerable light upon the mischief caused by the excess of red-tapeism.

Before the Revolution of 1789 art was included in the administration of the royal buildings and the royal demesne. The first Republic made it a part of the Ministry of the Interior; the first Empire reduced it to nearly nothing. It expanded again after the Restoration; but the citizen king, in 1830, took it from the Ministry of the Interior to give it to the Ministry of Commerce and Public Works. In 1833 it was divided between the Ministry of the Interior and that of Public Instruction. In 1848 it was one with the museums. In 1853 it became part of the attributions of the Ministry of State, and, twelve years later, of the Ministry of the Imperial Household. In 1870 a Ministry of Fine Arts was formed, and was given, nobody knows why, the direction of the stud farms!

That Ministry, which had been created to reward the services of one of Napoleon III.'s most faithful followers, disappeared, of course, in the storm which swept over France. Art went back to the Ministry of Public Instruction, which some time after gave up the public buildings to the Ministry of Public Works, and placed the museums in a state of almost absolute independence, until 1874, when they were again brought under the

control of the Fine Arts department. Since then the administration of Fine Arts has undergone numerous changes. Direction, General Direction, Under-Secretaryship of State, it has known the multifarious forms of officialism; but in that history, ludicrous in many ways, there is a bright spot. In 1881, when Gambetta was entrusted with the mission of constituting a Cabinet, which unfortunately proved the shortest lived of the numerous ministries of the Republic, he created a Ministry of *Art*, not of the Fine Arts, which truly deserves a few minutes' consideration.

"For nearly thirty years," says the report addressed by Gambetta to the President of the Republic, "foreign nations have multiplied the "institutions tending to foster the teaching of "art at all its stages and in all its applications, "and we have been able to see at the Universal "Exposition of 1878 how rapid, thanks to the "foresight of their Governments, has been the "progress realised in the art industries by nations "which formerly imitated us and now are our "rivals.

"The knowledge of that new development has "originated in France a movement of opinion in "favour of institutions which have everywhere "been followed by such prompt and important "results. Of all nations France was the first to "open technical schools. To the initiative of "the men of the Revolution are we indebted for "the museums and special classes which "con- "crate the alliance of art and industry. But it "has been very justly pointed out that in our "modern communities it is not enough to develop "the taste for, and the practice of, fine arts; and "that, economically and socially, art has a great "part to play in assisting industry and so trans- "forming the conditions of labour and influencing "in a decisive manner the productive forces of a "nation."

In a word, the Ministry of Art had the all-important mission of unifying and centralising the various agencies for technical instruction, from the lowest school to the *École des Beaux-Arts*. Its aim was to bring art and industry into a closer and every day more necessary contact; to redeem the task of the artisan from the opprobrium which had too long weighed upon it; to appeal in the name of the State to all the arts reconciled after so many years of unproductive misunderstanding; finally, not so much to give a direction as to establish a pact of confidence between private initiative and public action.

One of the most remarkable features of the recent and present history of this country—I mean England—is the movement, more pronounced as it goes, towards centralisation in all the various branches of public activity. England is the home of private initiative, and such a centralisation will not necessarily hamper it, but rather direct its efforts and prevent overlapping. The time is

drawing near when it will be found necessary to readjust the administrations which have here to do with art—museums, Department of Public Works, Science and Art Department. I do not, for my part, agree with the Incorporated Association of Head Masters, which proposed at their last meeting, according to the recommendation of the Royal Commission, to merge the Science and Art Department in the future central authority for secondary education.

A department of Art should, in my humble opinion, include, first, the schools of art from the lowest degree to the highest, and technical education should be made a part of that section. secondly, the museums. A time will come, I hope, when people will understand that no museum, be it ever so rich, is of the slightest value if it is not organised for education; if it is not so classified that one may come out of it with more knowledge, and not with the tired feeling which long rows of pictures, long lines of statuary, and overcrowded cases are apt to inflict upon the hapless visitor. Thirdly, the buildings, their construction and their decoration. There it will be necessary not to forget that the architect must be, as in the glorious days of old, in close contact and harmony with the artists entrusted with the decoration of his work, and that no good can come of making a building a field of competition between artists of different schools and styles.

But that is neither here nor there. My business is with France, not with England. As the French say, *Revenons à nos moutons*. Has the State a right to interfere with art? Even in France, where people rely so much on the State, there is upon that point a great divergence of opinion; some contest altogether such a right to the State. To put their arguments in a nutshell, they say that art needs freedom, that artists cannot breathe in an atmosphere of protection and red tape. I concede that the administration of art requires the greatest tact, and that the success of a director of art depends largely upon his personal qualities. But surely the State has a part to play in regard to art; I know of no country, be it ever so jealous of its freedom, where the State is not expected to help and to subsidise education, if it does not entirely control it. The more you extend the political franchise, the more you impose upon the State the duty to see that instruction is properly given to all who by their ballot-paper hold a part of responsibility in the making of their country's history. The State can and must give to those who wish and are worthy of it the means of educating themselves, of getting possessed of the knowledge which will allow them to rise in the profession to which they want to devote their lives. We shall see what should be the limits of the action in regard to the teaching of art. But upon the main point there cannot be any disagreement.

Again, the State is a curator. It is the trustee, the keeper of the treasures of art which belong to the nation. It has a plain duty in regard to museums, to the protection of artistic and historical buildings; nor can the necessity for its action here be denied.

Lastly, the State is a great public Builder. I believe that in this department its duty, as I tried to point out, is to promote that glorious collaboration between architects, painters, and sculptors which alone gave, and will give, the world monuments truly complete. The State does not always see it. There is no *esprit de suite* in matters which are too much left to take care of themselves. The great object in view is lost sight of, and it is the more to be regretted at a time when artists are, as perhaps they never were before to the same extent, perfect masters of their technics, when architects have developed a taste for decoration which is truly admirable.

Let us speak first of the State in France as a teacher of art.

There are in France numerous schools of art. Many are due to private initiative, and the State gives them grants which ought to be according to the results, for in that way only is progress fostered. But the State has not in France sufficiently recognised the importance of the teaching of drawing. As a matter of fact, the knowledge of drawing is every whit as important as the knowledge of writing. In the epoch-making address which he delivered in 1887 at Manchester, Huxley said: "In my judgment there is no mode of exercising the faculty of observation and the faculty of accurate reproduction of that which is observed, no discipline which so readily tests error in these matters as drawing properly taught"; and he added, "Nothing has struck me more in the course of my life than the loss which persons who are pursuing scientific knowledge of any kind sustain from the difficulties which arise because they never have been taught elementary drawing." One hears a great deal at present about technical education. It cannot, I think, be denied, and all the inquiries made in the last few years show it plainly, that the nations which from a lower rank as manufacturers have come to the front are those where the teaching of drawing has been given its proper place. That teaching is necessary to all citizens, whatever avocations they pursue, and from the training schools which form the masters and mistresses it must make its way into all elementary schools. France sees it, and has made, in the last few years, real steps in that direction.

The present organisation of the National School of Fine Arts in Paris dates in the main from 1863. Previously there was a teaching which Count de Nieuwerkerke, Superintendent of Fine Arts, thus characterised: "The teaching is for the painters, sculptors, and engravers nearly confined to a



"class in drawing, if one may so call short sittings  
 "in which, during a few months every year, the  
 "pupils draw from casts or from life under the  
 "eyes of a professor who goes along the forms  
 "making corrections. For the more advanced  
 "pupils there is, besides, a class of anatomy. The  
 "architects follow classes in mathematics, descrip-  
 "tive geometry, architecture, history of art, and  
 "construction. Finally, all the pupils follow lec-  
 "tures on general history. It is noticeable that  
 "most of the classes are sparsely attended. A  
 "few do not even take place."

The decree of the 13th November 1863 was supposed to be a reaction against the preceding system. It was most certainly an improvement, as it opened new classes, made the museum more effective, and the library more useful. But it established studios in the school under the supervision of masters appointed by the Government, and that was a false and dangerous step. The State has a plain duty, that is, to diffuse the general teaching of art in order to awake vocations which are often ignorant of themselves. It goes beyond its proper mission when, trying to blend that wise method of general education with this or that system of individual teaching, it favours doctrines which have no real value, unless they are left to produce themselves in complete freedom.

Far from my mind to contest the usefulness of the School of Fine Arts, which was rendered more effective still when, in 1883, a new regulation introduced into the curriculum the teaching of those elements common to all arts. But I would like to see the State as impartial as it is in our human nature to be. Barye, the great sculptor, said one day: "We have a school where we are not content to teach the language of art; we teach also how to use that language so as to be able to express everything and compose everything according to a geometrical disposition, so that, with an excellent alphabet, all the words being placed pyramidically, we obtain unintelligible sentences." The State is justified in giving a general teaching which will enable the student to go in a condition of efficiency to those masters who best answer the impulses of his nature and his conception of art. The State is no more justified in teaching how to make a picture than it would be in teaching how to write a novel or compose a play.

*London, 17th Jan. 1896.*

## THE AVERY MEMORIAL LIBRARY.

By BARR FERREE [*Hon. Corr. M.*, New York].

The most important endowment yet made in America for the diffusion of architectural knowledge and help to the study of architecture is that known as the Avery Architectural Library, a memorial library of architecture, archæology, and decorative art, in Columbia College, in New

York. The architectural school of this college has long enjoyed a wide reputation at home and abroad as the leading school of its kind in America; and, like many of the departments of our American colleges, it began with a limited endowment and in a restricted manner. Under the capable guidance of Professor William R. Ware [*Hon. Corr. M.*], it speedily assumed a prominent place among the schools of its class; increased funds were placed at the disposal of its conductors, a working library was purchased, and within the past few years travelling scholarships were added to the advantages it offered its students, several of which have been richly endowed. In its architectural school, therefore, Columbia College possessed a powerful and active centre of architectural interest, and to this great advantage there has now been added another in the Avery Architectural Library.

The Avery Library is quite distinct in plan and in scope from the educational work carried on under the direction of the faculties of the college. The library in the school of architecture is a working library—a good, choice collection of necessary works supplemented by a vast collection of photographs. It is a library for the students, and makes no pretence to be other than this. The Avery Library, on the other hand, is a general reference library, wholly separate from the school library, and designed for the advanced student and the architect, instead of for the college undergraduate. And though its management is as distinct from that of the school as its situation in the general library building of the college, it nevertheless enormously increases the architectural resources of the college, and gives it, in this respect, a position quite unique among American institutions of learning, and a prestige which cannot but increase with each succeeding year.

Few subjects have been so difficult of study in America as the history of art, or, indeed, any phase of art which is recorded in a literature. The public libraries of America are not richly endowed, and the demand for costly art books has been limited, and their price very great in proportion to the use made of them. Since the Centennial Exhibition in Philadelphia, in 1876, opened American eyes to their artistic position, a new interest has been taken in artistic affairs, and librarians have found it necessary to respond, as best they could, to the demands made upon them for books on art. Yet of all the libraries in America, only one, prior to the founding of the Avery Library, possessed anything like a satisfactory collection of art books, employing that term to include standard and costly works whose price placed them practically beyond the reach of the individual student or architect. This was the Boston Public Library, which, about a year since, published a catalogue of its architectural books.

It is, perhaps, not necessary to add that the need of an extended architectural library in

America has been among the most pressing wants of our students. No other class of books is so costly; and it might almost be said no other is so necessary to the student. Attempts to found such a library, which would be a general storehouse of architectural knowledge, accessible to students from every part, have been made by one or two architectural organisations; the New York Chapter of the American Institute of Architects, for instance, having a library of its own, for the replenishing of which a special fund was started. This collection is not inconsiderable, though, from the absence of any extended endowment, it is far short of the collection in the Boston Public Library. The necessity for an architectural library, liberally endowed, wisely selected, and planned on the broadest principles, has therefore long been urgent in America.

This want has now been supplied through the liberality of two citizens of New York—Mr. and Mrs. Samuel P. Avery, who, in memory of their son, the late Henry Ogden Avery, have endowed a library of architectural and decorative art in Columbia College. The library was begun in 1890 with a gift of the books and drawings from the library of Mr. Henry O. Avery, with a money gift of \$15,000 for the immediate purchase of books, and \$15,000 additional to be invested as a permanent fund, whose income alone should be used for binding and repairs to books and further purchases. The endowment fund was afterwards increased to \$25,000, and the original gift has been largely supplemented by Mr. Avery both in money and in books, many costly additions having been made to the volumes at frequently succeeding intervals, and long after the completed endowments were made.

As originally proposed, the collection was to be composed of books relating to architectural and decorative art; as afterwards developed, the widest possible construction was put upon the scope of the library, which now includes many notable books not coming under that head. From architecture it was but a step to archæology; from decoration it was hardly a step to sculpture. Proceeding on the broad field bounded by these arts, and keeping always in view the chief end of the library—a collection of books illustrating the fine art of architecture—a splendid collection has been gathered within the five years that have passed since the first gifts of its donators. The publication of the catalogue, which is now fresh from the Press—a superbly printed volume, whose cost has been generously borne by Mr. Avery—is not only a handsome testimonial of his liberality, but a valuable and useful memorial to his son. This collection is not only large in itself, as its catalogue testifies, but it is one of the really great architectural libraries of the world.

A library of the fine art of architecture it is, but it is rich in every phase of art; engraving and

painting alone not being represented to any considerable extent, though both subjects are more or less illustrated. Some subjects which might properly be included are as yet but scantily represented. Such are engineering, drawing, and the more practical aspects of constructive architecture. Books on all these subjects are included in the present resources of the library, but it was deemed wiser—and to this there must be general assent—to expend the money available for those more costly works, essential to the architect and the student, which, owing to their great cost, could seldom be purchased by individuals. The library is therefore a storehouse of costly books, and its utility is the greater because of this.

It is not my purpose, in this brief notice, to summarise the literary and illustrative riches of this collection. In one respect it stands almost alone among the architectural libraries of the world: in the extent of its collection of architectural and archæological periodicals. Upwards of two hundred publications of this class are represented by complete sets; and in this respect, so far as my personal acquaintance with architectural libraries goes, it is only exceeded by the library of the Société Archéologique du Midi de la France, at Toulouse. It is richer than the Toulouse library in including many foreign publications other than French, but that library contains the publications of many French societies not represented in the Avery collection. It is quite impossible to estimate the value of the Avery Library in this respect to American students, since there is no other department of architectural literature in which American libraries are so deficient.

So far as the general scope of the Avery Library is concerned, it is necessary to add that it includes many books allied to its general subject, yet not directly included in it. Costume, furniture, numismatics, tapestry, heraldry, ceramics, textile fabrics, industrial arts, metal-work, arms and armour, and other artistic subjects not strictly architectural, are represented by many hundreds of costly volumes. Biographies of artists and architects, special church and county (English) histories, and much other valuable material that testifies to the breadth of view taken by the purchasers of the collection, are amply represented. Many rare and curious volumes are also included, with manuscripts and drawings; but the aim has been to provide useful, general, and monumental works, not a collection of bibliographic curiosities. In other words, the architect, and the student can now find in New York almost every important book bearing upon the historical aspects of the fine art of architecture, in a library conducted in the interests of students, with great freedom of access, and within convenient reach. It is not too much to say that the placing of this collection within the reach of those interested in its subject is the most valuable service yet rendered to the art of architecture in



America, and its founders have placed the architectural public of our country under lasting obligations by their munificent memorial to their son.

Young Mr. Avery, in whose memory this library has been founded, was born in Brooklyn, New York, in 1852. His early architectural education was obtained in the drawing schools of the Cooper Union, in New York, and subsequently in the office of Mr. Russell Sturgis. Between 1872 and 1879 he studied in Paris, at the École des Beaux-Arts, and on his return to America entered the office of the late Richard Morris Hunt. In 1883 he opened an office for himself, and followed the practice of his profession until his death on April 30th, 1890. His earliest surroundings were of an artistic nature, and in the library that bears his name he has received a worthy and magnificent memorial.

The conduct of the library has been committed to a Commission, composed of the Librarian of the college (Mr. George H. Baker), the Professor of Architecture (Mr. William R. Ware), and Mr. Russell Sturgis; and with the two former is lodged the power of selecting the third member in the event of the retirement of Mr. Sturgis, it being stipulated that his successor shall always be an architect not connected with the college. The value of the collection, so far as the selecting of books is concerned, has depended upon their disinterested labours, and to them, not less than to Mr. and Mrs. Avery, the architects of America owe a lasting debt of thanks for the ability and discretion with which they have discharged the trust committed to their care.

New York, 10th Jan. 1896.

## NOTES, QUERIES, AND REPLIES.

### EXPERIMENTAL RESEARCH.

#### "Sound in its Relation to Public Buildings."

A Paper on this subject, by Mr. H. W. Burrows, was read before the Institute last March, and published in the JOURNAL [Vol. II. pp. 353, 423]. In the discussion of it Professor T. Roger Smith urged that the Science Standing Committee should endeavour to collect and record further information on the subject. It is suggested that members of the Institute, residing as they do in all parts of the country and abroad, might facilitate this inquiry by undertaking to study at least one public building in their immediate neighbourhood, with regard to its acoustic properties. It would also be desirable that the inquirers should associate themselves for the purpose with musicians and speakers who are in the habit of using the buildings, varying opinions often being expressed upon the merits or demerits of the same building, dependent upon the purpose to which it is devoted. It is hoped that the Allied Societies will

especially urge their members to aid in this research. If a sufficient number of members be willing to assist, it is proposed, in order to insure uniformity and simplicity in the classification of results, to issue a Schedule of questions indicating the lines on which the inquiry should be based; among them would be the following:—

1. A sketch plan, section, and elevation of the interior should be given, or references made to measured drawings or descriptions of the building, especially those describing it with regard to acoustics, and when possible the name of the architect.

2. The materials used in the construction, and the furniture and fittings should be described.

3. The position of seats, relation of speakers to hearers, and the effect of an audience should be noticed.

4. The ventilation, lighting, and warming, and their effect on sound should be carefully noted.

5. It should be stated if the building is generally considered good or bad, for music or for speaking.

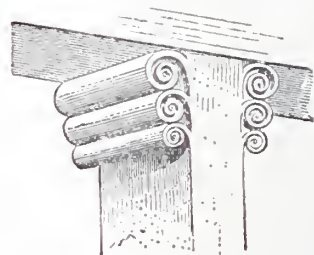
Other minor points might be noticed and added to the Schedule, which will be forwarded to any who are willing to assist in the inquiry, and who are requested to send their names to the Honorary Secretaries of the Science Committee, at the office of the Institute.

DR. RICHTER'S PAPER [pp. 109, 163].

Viollet-Le-Duc and the Origin of the Volute.

Viollet-Le-Duc, in his second *Entretien*, which treats of primitive buildings anterior to the Greek epoch, refers to the early architecture of peoples in remote parts of the East—the common source, he adds, of all the arts—and then, after quoting Vitruvius (Bk. ii. ch. 3), says: \*

"L'imitation de la construction de bois apparaît même dans les plus menus détails de ces édifices primitifs d'Orient. Ainsi on voit fréquemment au sommet des piliers des rouleaux superposés, présentant la décoration reproduite dans la figure. N'est-il pas évident que ces rouleaux ne sont autre chose que les



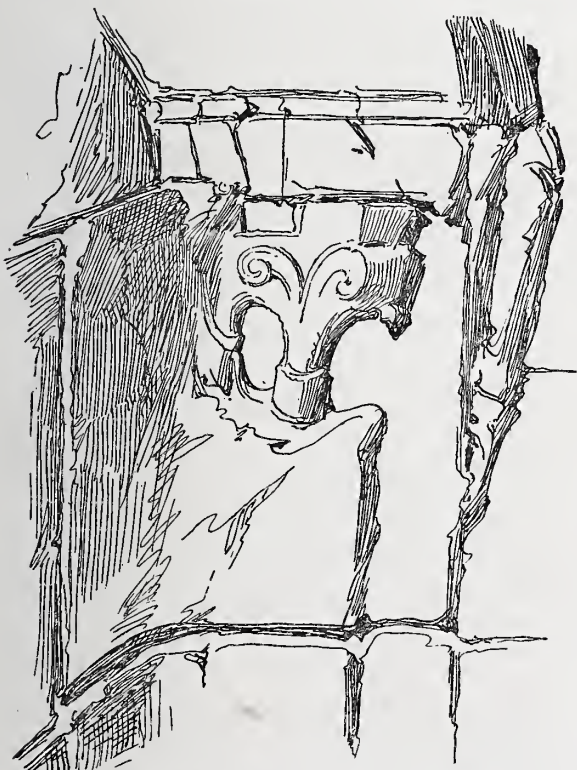
\* The translation of this extract, given by the late Mr. Bucknall in his edition of Viollet-Le-Duc's *Lectures* (Vol. I. p. 42), is as follows:—"The imitation of construction in wood appears even in the minutest details of these primitive edifices of the East: for instance, we frequently see at the tops of pillars a succession of rolls one over the other, presenting a decoration of the character shown in the figure. Is it not evident that these rolls are nothing more than the curled chips cut from the wooden post by the carpenter in the process of squaring it?"

"copeaux enlevés du poteau de bois par le charpentier, qui veut l'équarrir ?" Viollet-Le-Duc, who always took the practical, and never the sentimental, view of origin in architectonic forms and ornament, evidently had the volute in his mind when he wrote the sentence quoted above and made the sketch to illustrate his meaning. It would therefore be interesting to know, from the experience of members and others, to what buildings in Asia Minor and the further East Viollet-Le-Duc refers, as bearing rude decoration of the character shown in the diagram.

#### The Ionic Volute : An example at Jerusalem.

From WILLIAM SIMPSON [*H.A.*], R.I.—

In calling attention to the pilaster and volute from Tell el Hesi [p. 164], I quite forgot at the moment another example of what I believe is a similar form in Jerusalem. This also is due to



Volute Capital, Jerusalem. (From a sketch by William Simpson, R.I.)

the labours of the Palestine Exploration Fund, and forms part of the remarkable series of discoveries, in what was then termed "Underground Jerusalem," which were made by Sir Charles Warren, then known as "Captain Warren," when he carried on operations for the Fund, now over a quarter of a century ago. I visited Jerusalem in the early part of 1869, and had the privilege of going over these explorations at that date with the distinguished explorer. At the Gate of the

Chain—one of the entrances to the Haram—there is a series of underground arches, the first of which was discovered by Sir Charles Wilson, and is now known as "Wilson's Arch;" the others were, I understood, discovered by Warren. The rubbish of many centuries had gathered in these underground vaults, and I remember crawling over heaps of filth, and through dark, narrow holes, as if we had been rats. This was to reach an arched apartment, which Warren, with his tendencies as a "Craftsman," had dubbed the "Masonic Hall." This name was suggested by a pedestal and portion of a pillar still standing visible out of the accumulated rubbish. In one corner of this I sketched what appeared to be an unfinished capital, of which a pen-and-ink copy is here given. With the Tamassos Volutes, and the one from Tell el Hesi before us, I think there can be no doubt but this Jerusalem example belongs to the same style. Here is Warren's own description of it: "At each corner there were pilasters 'with capitals, but that at the north-east angle 'alone is in a moderate state of preservation.'\*" In a later work† he describes the hall as being "built with large drafted stones, pilasters at the 'angles inside, surmounted with carved Ionic 'capitals.'" In this book the writer attributes the construction to the period of the Maccabees. So far as I recollect, these pilasters were not at the sides of doors, as in the examples from Cyprus, but were at the corners of the hall; a point of importance, showing that this particular form was not limited to door-jambs. In this Jerusalem example the form is also decorative like the others; and whatever may be the origin of this volute, which is found all the way from Cyprus to Lachish, a very long period must be allowed to account for its change from a constructive to an ornamental character.

#### Dr. Richter's Researches in Cyprus [p. 158].

Exigencies of space necessitated somewhat free excision of Dr. Richter's notes in the last issue [p. 158], on British and German research in Cyprus, with a result perhaps a little unfair to the author. Dr. Richter desires it to be known that Germany has not enjoyed a monopoly of his labours in the exploration of the island. His first excavations (1879-81) were carried out for the late Sir Charles Newton, then Keeper of the British and Roman Antiquities at the British Museum. In 1881 he was employed by the Government in the Forest Department, and superintended the works for replanting. In 1882-83 he conducted excavations for the British Museum, and for the Cyprus Museum, then just founded. In 1885 a pick-and-shovel expedition on his own account resulted in the discovery of the Attic colony near

\* *The Recovery of Jerusalem*, 1871, p. 89. There is an illustration of the capital in the volume.

† *Underground Jerusalem*, 1876, p. 370.



Poli tis Chrysokhou, and the sites of Marion and Arsinoë. In the following year he was again at work for English residents, and the important discoveries then made suggested the formation of the Cyprus Exploration Fund. His subsequent work for the Berlin Museum and the German Emperor have occupied but a small part of his archaeological career. Dr. Richter mentions that, before he left Cyprus last July, he secured the digging rights of sites hitherto entirely unexplored, including an unknown ancient town and three sanctuaries. On one of these spots a Cyprian syllabary inscription was found, giving particulars of the rules and regulations of a temple.

### THE LONDON BUILDING ACT 1894.

#### Appeal to County Court from the Award of Surveyors.

From WILLIAM WOODWARD [A.]—

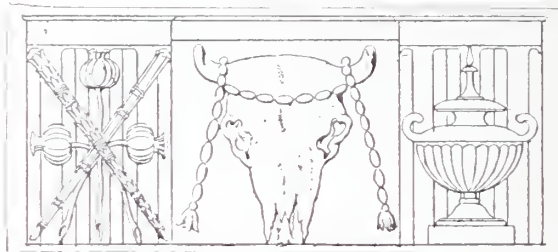
I believe it is exceedingly rare that an award of two surveyors under section 91, sub-section 2, has been appealed against by the other of the three surveyors, and the following case may therefore be of interest to members of the Institute.

The sub-section above mentioned is similar to that in the old Act, and is as follows :

Any award given by such one surveyor or by such three surveyors, or by any two of them, shall be conclusive, and shall not be questioned in any court with this exception, that either of the parties to the difference may appeal therefrom to the county court within fourteen days from the date of the delivery of the award, and the county court may, subject as hereafter in this section mentioned, rescind the award or modify it in such manner as it thinks just.

In the present case the usual party-wall notices had been properly served, and a Fellow of the Institute appointed as the third surveyor. I was acting for the adjoining owner, and the surveyor to the building owner had given notice to take down and rebuild a party-wall, he desiring to raise upon the wall, which would then be insufficient to carry the extra weight, and he appeared to be quite willing to bear the whole expenses of the rebuilding. When, however, the award was drawn by the third surveyor, I found that he had worked under section 95, sub-sec. 1 (a), which provides for the expenses to be borne *jointly* by the building owner and adjoining owner, and of course the surveyor to the building owner very readily joined the third surveyor and signed the award; but when it was passed on to me for signature, I declined to be a party to it, on the ground that sec. 95, sub-sec. 2 (b) was the right section, which provides for the *whole* of the expenses to be borne by the building owner.

I then commenced proceedings under section 91, sub-section 2, and the case was heard last year at the Clerkenwell County Court, with the result that the Judge rescinded the award of the two surveyors, and ordered the building owner to pay all costs.



### MINUTES. V.

At the Fifth General Meeting (Business) of the Session, held Monday, 13th January 1896, at 8 p.m., Mr. F. C. Penrose, F.R.S., *President*, in the Chair, with 14 Fellows (including 7 members of the Council) and 26 Associates, the Minutes of the Meeting held 16th December 1895 [p. 139] were taken as read and signed as correct.

The Secretary announced the decease of John Thomas Newman, *Fellow*; and Thomas Wells, *Associate*.

The Secretary referred to recent donations to the Library, and an expression of the thanks of the Institute to the several donors was ordered to be entered on the Minutes.

The following Associates, attending for the first time since their election, were formally admitted, and signed the Register, namely:—William Adam Forsyth, Herbert Phillips Fletcher, Ernest Edward Fetch, and Robert Saxton Besant.

The following candidates for membership in the various classes were elected by show of hands, namely:—

#### As Fellow.

ROBERT WILLIAMS [A.] (*Qualified as Associate* 1887).

#### As Associate.

CHARLES JAMES HAIR (*Qualified* 1895).

#### As Hon. Corr. Members.

Baron ALBERT VON LECOQ (Darmstadt).

FREDERICK SKJOLD NECKELMANN (Stuttgart).

The President announced that, by a resolution of the Council pursuant to the terms of By-law 20, and in accordance with the provisions of By-law 23, the following Associates had ceased to be members of the Royal Institute—namely, Alexander Bleakley and George Eastlake Thoms. The President further announced that, by a resolution of the Council pursuant to the terms and provisions of the By-laws above-mentioned, the following Associate had been suspended until further notice from membership of the Institute—namely, Colville Browne.

The President having read the Deed of Award of the Prizes and Studentships 1896, made under the Common Seal [pp. 181–83], the sealed envelopes bearing the respective mottoes or devices of the successful competitors were opened, and their names and addresses found to be as follow:—

#### THE ROYAL INSTITUTE SILVER MEDAL (Essays).

*A Priori*.—Banister F. Fletcher [A.], 29, New Bridge Street, Ludgate Circus, E.C. (The Silver Medal and Twenty-five Guineas).

*Conditioned*.—John J. Cresswell [A.], Victoria Chambers, Grimsby (Books of the value of Five Guineas).

*John Bull*.—Edward Albert Jollye, 29, Trevor Square, S.W. (Honourable Mention).

#### THE ROYAL INSTITUTE SILVER MEDAL (Drawings).

*Gillemrs*.—Hugh P. G. Maule [*Probationer*], Altair, Sutherland Road, Ealing, W. (The Silver Medal and Ten Guineas).

"X."—Cyril Wontner Smith [*Probationer*], 34, Woodberry Grove, Finsbury Park, N. (Medal of Merit and Five Guineas).

#### THE SOANE MEDALLION.

*Ad Finem*.—R. Shekleton Balfour [*A.*], 76, Inverness Terrace, W. (The Medallion and, under conditions of foreign travel, £100).

*Thor*.—John Anderson [*A.*], 4, The Mall, Haverstock Hill, N.W. (Medal of Merit).

*Bow Bells*.—Edwin Alfred Rickards, 125, High Street, Putney (Honourable Mention).

#### THE TITE PRIZE.

*Australis*.—Henry A. Crouch [*A.*], 35, Bernard Street, Russell Square, W.C. (The Certificate and, under conditions of Travel in Italy, £30).

#### THE GRISSELL MEDAL.

*Zampa*.—James Humphreys Tonge, East View, Haxby Road, York (The Medal and Ten Guineas).

The proceedings then terminated, and the Meeting separated at 8.45 p.m.

## MINUTES. VI.

At the Sixth General Meeting (Ordinary) of the Session, held Monday, 20th January 1896, at 8 p.m., Mr. Alex. Graham, F.S.A., *Vice-President*, in the Chair, with 24 Fellows (including 12 members of the Council), 43 Associates, 1 Hon. Associate, and 59 visitors, the Minutes of the Meeting held 13th January 1896 [p. 192] were taken as read and signed as correct.

The following Associates, attending for the first time since their election, were formally admitted and signed the Register, namely:—John James Cresswell (Grimsby), William Charles Waymouth, Charles James Hair, and Robert Messenger.

The Chairman announced that the Council, on behalf of the Institute, had resolved to take the most active steps in their power to preserve the Church of St. Mary Woolnoth from the destruction with which it was threatened—the said church being an architectural monument of the highest merit, and in its particular position an adornment to the City of London. Also that the President had been requested to attend the Public Meeting to be held at the Mansion House on the 22nd January to oppose the scheme of destruction; and support on behalf of the Institute any Resolution for the retention of the church. The Chairman added that any members able to attend the Meeting were requested to do so, and assist the President.

The Chairman delivered an Address to students [p. 169]; after which Mr. William Young [*F.*], Mr. Frank T. Baggallay [*F.*], and Mr. Beresford Pite [*A.*] delivered criticisms of the Designs and Drawings submitted for the Prizes and Studentships 1896 [171–81].

The Chairman made the following presentations, in accordance with the Deed of Award [pp. 181–83], namely:—

ASHPITEL PRIZE 1895 (Examination qualifying for Candidature as Associate): The Prize not awarded. Books value Five Guineas respectively to Mr. GEORGE JOHN THRIFT REAVELL [*A.*] and Mr. WILLIAM CHARLES WAYMOUTH [*A.*].

TITE PRIZEMAN 1894: Cheque for £10, being second moiety of the £30 for travel, to Mr. ALEXANDER ROBERT HENNELL [*A.*].

SOANE MEDALLIST 1895: Cheque for £50, being second moiety of the £100 for travel, to Mr. HUBERT SPRINGFORD EAST [*A.*].

PUGIN STUDENT 1895: Medal and cheque for £40 to Mr. ALFRED JOHN DUNN [*A.*].

OWEN JONES STUDENT 1895: Certificate and cheque for £25, being second moiety of the £50 for travel, to JOHN JAMES JOASS [*A.*].

The Chairman then proceeded to present the Prizes and introduce the Travelling Students for 1896, in accordance with the Deed of Award [pp. 181–83], namely:—

ROYAL INSTITUTE SILVER MEDAL AND TWENTY-FIVE GUINEAS (Essays): to Mr. BANISTER FLIGHT FLETCHER [*A.*], for Essay on "The Influence of Material on Architecture" under motto "A Priori."

Books value £5. 5s. to Mr. JOHN JAMES CRESSWELL [*A.*], for Essay under motto "Conditioned."

Certificate of Honourable Mention to Mr. EDWARD ALBERT JOLLYE, for Essay under motto "John Bull."

ROYAL INSTITUTE SILVER MEDAL AND TEN GUINEAS (Drawings): to Mr. HUGH PATRICK GUARIN MAULE [*Probationer*], for his drawings of Hampton Court Palace, under motto "Gvlielmvs."

Medal of Merit and cheque for £5. 5s. to Mr. CYRIL WONTNER SMITH [*Probationer*], for his drawings of Gedney Parish Church, Lincolnshire.

SOANE MEDALLION and, under conditions of foreign travel, One Hundred Pounds: awarded to Mr. ROBERT SHEKLETON BALFOUR [*A.*], *Inst. Medallist (Drawings)* 1892, *Pugin Student* 1894, *Tite Prizeman* 1895, for his design for an Institute of Architects, under motto "Ad Finem."

Medal of Merit to Mr. JOHN ANDERSON [*A.*], for his design under motto "Thor."

Certificate of Honourable Mention to Mr. EDWIN ALFRED RICKARDS, for his design under motto "Bow Bells."

PUGIN STUDENTSHIP (Medal and £40): awarded to Mr. CECIL CLAUDE BREWER.

OWEN JONES STUDENTSHIP (Certificate and £50): awarded to Mr. HUBERT CHRISTIAN CORLETTE [*A.*].

GODWIN BURSARY (Medal and £40): awarded to Mr. ALEXANDER NISBET PATERSON [*A.*], M.A.

TITE PRIZE (Certificate and, under conditions of Travel in Italy, £30): awarded to Mr. HENRY ARTHUR CROUCH [*A.*].

GRISSELL MEDAL AND TEN GUINEAS: awarded to Mr. JAMES HUMPHREYS TONGE, *Soane Medallist* 1894.

ALDWINCKLE STUDENTSHIP (£50, under conditions of Travel in Spain): awarded to Mr. HUBERT SPRINGFORD EAST [*A.*], *Soane Medallist* 1895.

A vote of thanks to the Chairman having been passed by acclamation, the proceedings terminated, and the Meeting separated at 10 p.m.

### The York Society.

The following are the recently elected office bearers for the year 1895–96:—President, Mr. H. Perkin [*F.*]; Vice-Presidents, Messrs. J. Lane and A. W. Turner; Council, Messrs. G. Benson, A. H. Claypoole, A. Hirst, J. T. Pegge, and J. Ferguson; *ex-officio* members of the Council, Messrs. W. G. Penty [*F.*], William Hepper, and Arthur Pollard; Treasurer, Mr. Norman R. Yeomans; Librarian, Mr. W. E. Walker; Hon. Secretary, Mr. A. B. Burleigh.

### The Glasgow Institute.

The following are the recently elected office-bearers for 1895–96:—President, Mr. T. L. Watson [*F.*]; Vice-President, Mr. J. J. Burnet [*A.*], A.R.S.A.; Auditor, Mr. Campbell Douglas [*F.*]; Hon. Treasurer, Mr. Alex. Petrie; Secretary, Mr. C. J. MacLean, Writer; members of the Council, Messrs. T. L. Watson [*F.*], Alexander Petrie, John B. Wilson [*A.*],



J. M. Monro, A. G. Thomson, John Thomson, J. J. Burnet [A.], J. A. Morris [F.] (Ayr), George Bell, David Barclay, and Alex. McGibbon [A.].

## PROCEEDINGS OF ALLIED SOCIETIES.

### THE MANCHESTER SOCIETY.

#### Westmorland Slates :

#### Their Geology, Chemistry, and Architectural Value.

By J. J. Thomas, Kendal.

Read 7th January 1896.

So far as I am aware, it is seldom that slates and slate-quarrying form the subject of a Paper to be read before an Architectural Society, and I wish to say at the outset that the opportunity now afforded of placing on the records of this important Society some account—imperfect though it be—of Westmorland slates is one which I highly appreciate.

It will be generally admitted, I believe, that slates deserve to be classed among the most important materials with which the architect, during the course of his professional career, has to deal; but it is doubtful whether the same scientific study has been made of them as of many other articles used in architectural work. It may be interesting at this point to give some idea of the magnitude of the industry which we have under consideration, and the quantity of slates produced in this country. I find from official statistics that about 15,000 men are employed in the slate quarries of Great Britain and Ireland; and that they produced, in 1894, 461,673 tons of slates, amounting in value to £1,171,366; out of this total £940,553 worth were used in this country, the remainder being exported to various foreign countries, a list of which, with the quantities sent to each and their values, I append to this Paper. It is also interesting to note that the slate trade comes fourth on the list of those industries tabulated in the mineral statistics of Great Britain and Ireland. Coal comes first, the value in 1894 being £62,730,179; stone, £7,695,716; iron ore, £3,190,647; slates, £1,171,366.

From the foregoing figures it will be seen that the slate industry in this country is one of very considerable magnitude, and represents in money value a large annual turnover.

In order to make the Paper easy to follow and as intelligible as possible, I propose to deal with the subject under three main headings:

1. The Geological Position and Extent of the Slate-producing Area of the Lake District.
2. The Chemical Composition of Slates, and the Action upon them of Impure Atmospheres and varying Degrees of Temperature.
3. General Description of Westmorland Slate-Quarrying, the Method of preparing the Slates, Cleavage, Architectural Value.

*The Geological Position and Extent of the Slate-Producing Area of the Lake District.*—The Lake District proper is composed of Silurian strata, both the lower and upper divisions of the formation being represented, and they may be divided into five groups, which I give in order of deposition, viz.:—

Skiddaw Slates, 7,000 feet	} Lower Silurian.
Green Slate and Porphyry Series, 7 to 10,000 feet	
Conistone Limestone, 300 feet	
Conistone Flags and Grits, 7,000 feet	} Upper Silurian.
Ludlow Rocks, 5,200 feet	

From the above table it will be seen that the Skiddaw Slates, which comprise a group of rocks of enormous thickness, and cover an area of about 200 square miles, form the base of the Lower Silurian series of the Lake District, and have their equivalent in the Arenig Slates or Lower Llandeilo Flags of North and South Wales.

The group mainly consists of dark slates or slaty mud stones, with occasional beds of harder material of a flaggy nature, but almost devoid of cleavage. Some geologists describe the Skiddaw Slates as of little industrial importance: so far as slates are concerned, this may be correct, as, with the exception of Bowseale Fell and Embleton Valley Slate Quarries, both of which, I believe, are now idle, no roofing slates are obtained from this group. But several important, and at one time lucrative, mineral deposits were worked in this formation, among which may be mentioned the famous Goldscope Mine, which produced in former years both gold and copper, the latter, it is said, in large quantities. A number of other mines produced lead, copper, iron, and cobalt. It may also be stated that good flags have been quarried at Crummock, and near Shap slate pencils were once largely produced.

Lying conformably on the Skiddaw Slates are the Green Slate and Porphyry series, also of Lower Silurian age, their equivalent in the Silurian Rocks of North and South Wales being part of the Bala Beds, the whole of Llandeilo, and probably part of the Arenig formation.

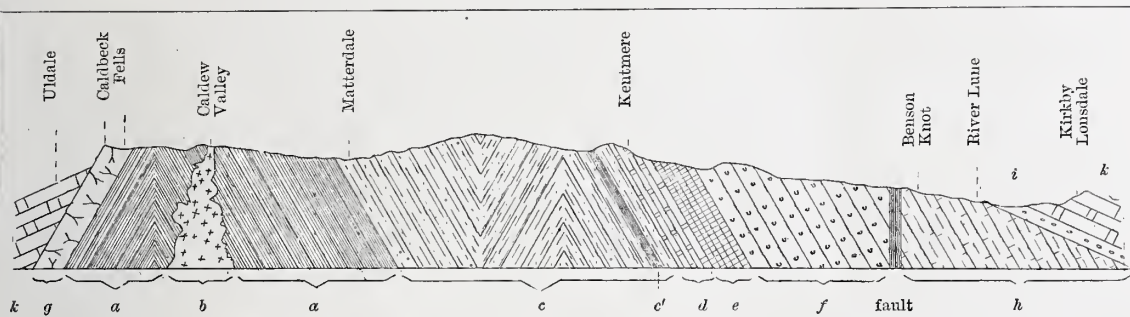
It need hardly be mentioned that this group of rocks is one presenting many points of considerable interest, and has for years attracted the attention of some of our leading men of science, several of whom have placed on record, at considerable length, the result of their investigations; and, although it would be extremely interesting to follow some of these geological pioneers in the study of these rocks, I shall only briefly notify their chief geological features, and proceed more especially to deal with them as slate-producing rocks, as it is from this formation that all the Westmorland green roofing slates of commerce are obtained.

The group is one of great superficial extent, extends twenty-five miles in an E.N.E. and W.S.W. direction, and averages about thirteen miles in a N.W.W. and S.S.E. direction; covers an area of about 325 square miles, and attains a thickness of about 10,000 feet. It is composed of a vast accumulation of bedded felspathic ashes and breccia, with alternate beds of porphyries of considerable thickness. The whole group, which is entirely devoid of fossils, except a small band near the top, is the result of a series of volcanic actions, estimated to have spread over a period of about one and a half million years. The chief centres of this volcanic activity are supposed to have been Ambleside and Keswick, in addition to which there were several other smaller centres of irruption in various parts of the district.

The volcanic activity which commenced at the close of the Skiddaw Slate period is not supposed to have been marked in its earlier stages by any general upheaval of rocks. In all probability the earlier volcanic outbursts were submarine, as the rocks at Eycott Hill, near Black Combe, and also in an exposure near Shap, seem to point to the conclusion that the lower deposits, although in all probability thrown high above the water, fell back and were interstratified with deposits of mud and sand. Later in the period, however, it seems clear that the volcanic action was accompanied by a gradual upheaval of the old ocean bed.

Turning now to the series, and examining it from a quarrying and slate-producing point of view, I think it may be safely stated that it presents more difficulties and complications than any other slate-producing formation on the geological chart. Out of the whole 325 square miles which this group covers, there are only about twelve or fourteen beds from which slates are obtained. Ten or twelve of these are situated near the top of the series in the Conistone district, and the remainder at the base of the series in the neighbourhood of Keswick. The whole area between these two points is practically barren of any rock sufficiently well cleaved to produce roofing slates.

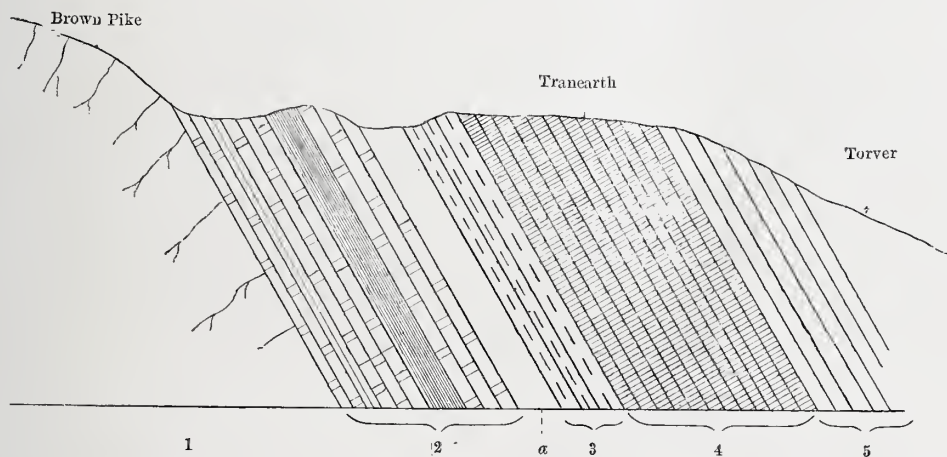
It may be pointed out here that the fine ash beds from which the slates are obtained are in each case in close proximity to where the main centres of eruptions are sup-



*a*, Skiddaw Slates.  
*b*, Granite of the Caldew Valley.  
*c*, Green Slates and Porphyries.  
*c'*, Fossiliferous Band near top of *c*.

*d*, Conistone Limestone.  
*e*, Conistone Flags.  
*f*, Conistone Grits.  
*g*, Felspathic Traps (G. S. and P. Age).

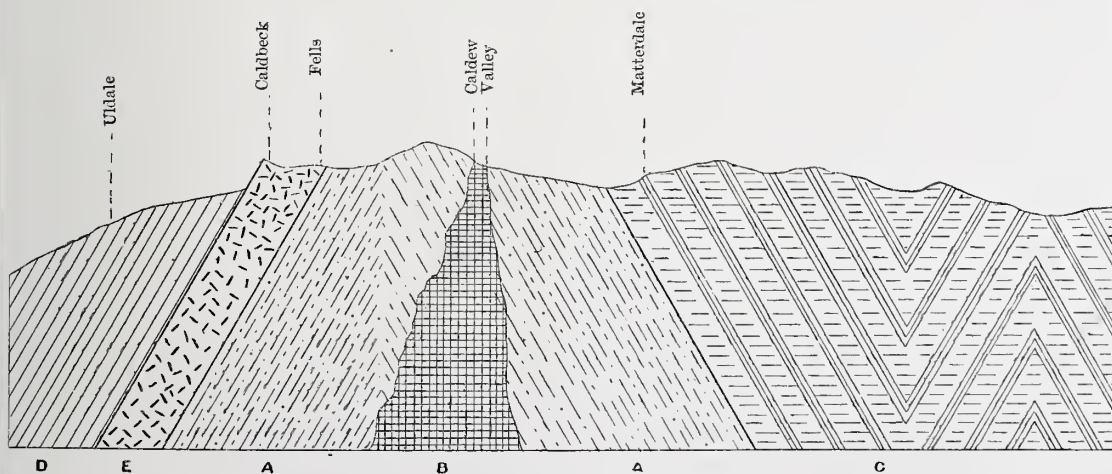
*h*, Lindlow Rocks.  
*i*, Upper Old Red Sandstone.  
*k*, Carboniferous Rocks.



1, Green Slates and Porphyries.  
 2, Conistone Limestone and associated shales.

3, Gray Grits.  
 4, Conistone Flags.

5, "Sheerbate" Flags.  
*a*, Probable position of black Graptolite shales.



A, Skiddaw Slates.  
 B, Granite of the Caldew Valley.  
 C, Green Slates and Porphyries.

D, Carboniferous Rocks.  
 E, Felspathic Traps of the Caldbeck Fells, the equivalent of the Green Slates and Porphyries.



posed to have been located, and this may point to a period of less violent volcanic activity than when the porphyries and breccias were emitted.

Accompanying the fine ash beds are almost invariably found beds of breccia, also cleaved, but generally too rough and coarse in the grain to make marketable roofing slates. One of the principal difficulties to contend with in this series is the uncertainty of the continuity of the bed of slate, from the fact that there is a marked difference between a volcanic deposit and a sedimentary formation. The former is not only subject to considerable variation in the character as well as in the degree of fineness of its deposit, but also in its extent; while, on the other hand, sedimentary formations, such as occur in North Wales, have been formed under deep sea, and during a period of comparative calmness. You will therefore readily understand why a sedimentary bed is much more regular than a fine ash bed emitted from the crater of a volcano.

*Coniston Limestone.*—The Green Slate and Porphyry series is overlaid by the Coniston Limestone, a narrow band averaging about 300 feet in thickness, and extending from Millom to Wasdale Crag, near Shap. This is considered to be the equivalent of the Bala Limestone of North Wales, and is the topmost bed of the lower Silurian Rocks of the Lake district. It consists of hard and compact limestone of a dark blue colour, and is largely intermixed with cleaved slates. It is of little or no commercial value.

The Limestone is succeeded by the *Stockdale Shales*, a narrow group of Graptolitic mudstones, with bands of dark and purple shales, forming the base of the Upper Silurian of the district. On Torver and Broughton Moors several attempts have been made at quarrying these shales for slates and flags, but hitherto the discoveries have not been of an encouraging character.

Lying on the Stockdale Shales are the *Coniston Flags and Grits*, which are precisely the same as the Denbighshire Grits and Flags overlying the Tarranon Shale in North Wales. The lower bed—the flags—attains a thickness of about 2,800 feet, while the grits measure 4,000 feet in thickness. The flags consist of dark blue sandy mudstones, which when cleaved are largely quarried for slates and flags, the principal quarries in this series being on Torver and Kirkby Moors. The grits are composed of harder material, principally gritty sandstones with interstratified beds of slates and flags. These bring us to the *Ludlow Rocks*, an extensive group of fossiliferous rocks extending from Kendal to the Lune Valley, and, as will be seen from the section, are of the same geological age as the formation bearing the same name in North Wales.

The above brief outline of the geology of the slate formations brings us to the next heading—viz.:

*The Chemical Composition of Slates, and the Action upon them of Impure Atmospheres and varying Degrees of Temperature.*—However interesting and valuable may be the inquiry into the geological history and relative age of the various slate-producing rocks, and the manner in which they have been formed, it is possible that from a utilitarian point of view the chemical analysis of the slates, and the effect varying degrees of temperature, &c., have upon them, is equally, if not more, important to us.

There is probably no article of domestic use with which we are more familiar and have more prominently brought before us than a slate; even from our earliest schooldays we were brought face to face with this useful article of commerce. It is, however, doubtful whether many, even of those who most frequently use them, have thought it necessary and of sufficient importance to inquire into the characteristics and relative values of the different kinds of slates.

It is a remarkable fact that although, as will be readily admitted, there is a great difference in the “wearing” quality of the various descriptions of slates, the variation

in the chemical compositions is exceedingly slight. I will give the analyses of some of the principal varieties of roofing slates.

1. *Analysis of ordinary blue Welsh roofing slate, Cambrian formation; by Professor Hull.*

Silica . . . . .	60.50
Alumina . . . . .	19.70
Iron (protoxide) . . . . .	7.83
Lime . . . . .	1.12
Magnesia . . . . .	2.20
Potash . . . . .	3.18
Soda . . . . .	2.20
Water . . . . .	3.30
	<hr/>
	100.03

2. *Analysis of a dark-blue slate from Llangynog, North Wales; by D. H. Richards.*

Silurian Rock. Slate dried at 100° C.	
Loss on ignition . . . . .	3.720
Silica . . . . .	60.150
Alumina . . . . .	24.200
Protoxide of Iron . . . . .	5.837
Sesquioxide of Iron . . . . .	1.815
Not determined (talkalies) . . . . .	4.278
	<hr/>
	100.000

3. *Analysis of the material of the green bands in the bluish-purple slates at Llanberis; made by the Royal School of Mines. Cambrian formation.*

Silica . . . . .	66.45
Titanic Acid . . . . .	0.63
Alumina . . . . .	13.38
Protoxide of Iron . . . . .	1.71
Peroxide of Iron . . . . .	1.41
Protosessquioxide of Manganese . . . . .	0.91
Lime . . . . .	2.86
Magnesia . . . . .	6.28
Potash . . . . .	0.05
Soda . . . . .	0.90
Carbonic Acid . . . . .	1.30
Combined Water . . . . .	3.90
Hygroscopic Water . . . . .	0.13
	<hr/>
	99.91

4. *Analysis of the purple slates of Nantlle.—Kirwan's Mineralogy. Cambrian formation.*

Silica . . . . .	. 48
Argillaceous Matter . . . . .	. 26
Magnesia . . . . .	. 8
Lime . . . . .	. 4
Iron . . . . .	. 14
	<hr/>
	100

5. *Analysis of a green Westmorland slate; by George Vogt.*

Silica . . . . .	50.88
Alumina . . . . .	14.12
Iron Oxide (Ferrous) . . . . .	9.96
Lime . . . . .	8.72
Magnesia . . . . .	8.67
Carbon Dioxide . . . . .	6.47
Potash . . . . .	. 88
	<hr/>
	99.70

It will be seen from the foregoing analyses that slates are chiefly made up of silica and alumina, from which we may reasonably infer that they were once ordinary clay.

The principal difference in the composition of the Welsh blue, Welsh purple, and Westmorland green, lies in the varying proportions of iron which they contain. The blue Welsh slate contained 7.83 per cent. of iron in the ferrous state FeO; the purple contained 14 per cent. of iron in the ferric state Fe<sub>2</sub>O<sub>3</sub>; and the green Westmorland slate contained 9.96 per cent. of iron in the ferrous state.

It is generally asserted that iron is the agent which

determines the colour of the slate, and it has always been laid down that Westmorland slates derive their colour from the presence of iron in the ferrous state, while the purple slates of North Wales derive their colour, like the marls of the Permian Rocks, from iron in the ferric state; but on examination of the analyses given it will be seen that the iron in the blue Welsh slate is also in the ferrous state, hence it is difficult to determine with any degree of certainty which of the elements plays the most important part in the determination of colour.

One of the most important points to notice in the determination of the quality of a slate is its porousness, as undoubtedly those slates, other circumstances being equal, are best which absorb the least amount of moisture, for the absorbed moisture not only increases the weight of the slate, but in frosty weather is converted into ice, and swells, with consequences highly detrimental to the soundness of the slate.

Several experiments have from time to time been made to demonstrate this quality. I will only mention two, which I have made specially for this Paper.

I took three slates, each having a surface of 144 square inches. I had them all carefully weighed, and then placed in a bath of water. One was taken out after an immersion of fifty hours, and after the surface-water had ceased to drip, was weighed again, and I found the weight 100 grains in excess of its original weight. It was then placed before a fire, and in a few minutes the surface was quite dry, and on being put on the scales again was only 30 grains in excess of its original weight. The other two slates were in the water 312 hours, and after the surface-water had ceased to drip I placed them on the scale. In the one case the increase in weight was 127 grains, and in the other 200 grains. Both were then placed before a fire, and, as in the first case, the surface was perfectly dry in a few minutes, and on being again weighed one was 8 grains heavier than its original weight, while the other was exactly its original weight. This shows in one case the absence of any absorption, and in the others only a few grains, which may be considered as highly satisfactory.

It may be taken that the amount of moisture the best Westmorland and Welsh slates may absorb is not sufficiently great to make any material difference in their weight, or in the action of frost upon the absorbed moisture; but there are slates to which, from their flaky and jointy nature, the absorption of moisture is highly detrimental, as the absorbed water when frozen tends to loosen the joints and open the flakes, which process, when frequently repeated, materially damages such slates. These, however, when used in countries less liable to sudden and violent changes in temperature than we are in England, prove as serviceable as the best known slates in this country. There is still another point of importance depending upon the compactness or otherwise of the slate. It was shown by the tables of analyses that all slates contain varying percentages of iron, some in the ferrous and some in the ferric state. Iron, as you all know, has a great affinity for oxygen, and if the slate be porous the oxygen of the air combines with the iron when in the ferrous state, changing it into ferric, with the result that the colour is altered and decomposition on a small scale is carried on.

In addition to this there is a further chemical action that takes place, and a much more disastrous one than the changing of ferrous into ferric oxide. As the analyses show, all the slates contain calcic carbonate, and some of them magnesic carbonate. If the slate be sufficiently porous to admit carbon dioxide ( $\text{CO}_2$ ), which is equally prevalent in otherwise pure and impure atmospheres, the carbonates are changed into bi-carbonates, which are soluble in water— $\text{CaCO}_3 + \text{H}_2\text{CO}_3 = \text{CaH}_2(\text{CO}_3)_2$ —the natural result of this being that the slate will in time decompose, and its "waterproof" quality be eventually destroyed.

Some time ago a Swiss scientist contributed a Paper on Slates to one of the magazines, in the course of which he suggested the following experiment to test the quality of a slate:—Reduce the slate to powder, add hydrochloric acid; if strong effervescence, proof of a bad slate, full of lime. A portion of another slate is taken, and likewise reduced to powder, and placed in a test tube and heated over a Bunsen flame. A yellow sublimate and fumes of sulphurous acids prove the presence of much iron pyrites, consequently a bad slate.

I am afraid I cannot agree with these conclusions, as my experience, and that of many others, of slates containing both lime and iron pyrites proves the contrary.

The analyses I have given show the presence of lime in all the slates which, on the application of HCL, gives a brisk effervescence, and if the above contention be correct, we must classify all these as bad slates, whereas quite the contrary is the fact.

The best Westmorland slates which we know have stood the action of the atmosphere in some instances at least 100 years; and of some of them it would be safe to state that they have been exposed 200 years, and still show no signs of decay. The same might be said of some slates containing iron pyrites, which would give chemical results pointing, according to this theory, to a bad slate; but here, again, we are in a position to produce slates heavily charged or permeated with iron pyrites—such, for instance, as the Ballachulish and Easdale slates, in the North of Scotland, both of which have stood for a considerable time, without the least sign of decay from this cause.

After all, I am much inclined to believe that there is a limit to chemical analysis in the determination of the quality of a slate. The chemical composition of most slates with which we have to deal is very much the same, but we do know that the wearing quality of the various slates differs materially. All this seems to me to suggest the presence of another agent playing an important part in the formation of a slate, and I humbly submit that the *mechanical arrangement* of the particles contained in the slate has more to do with the determination of quality than the best conceived proportions in chemical analysis.

If we were to take the various elements or ingredients which from analysis we know constitute the best slate, mix all together, and apply sufficient pressure to produce a compact sheet or block, we should not produce an article possessing the same qualities as an ordinary roofing slate.

In support of this theory, I beg to mention as an illustration the substances known as diamond and graphite, both of exactly the same chemical composition but differing widely in their properties and ultimate value, which seems to me to point to a different mechanical arrangement of the particles of which the two substances are composed.

How, then, are we to determine the quality of a slate? For my part, while acknowledging with gratitude the assistance obtained from the chemical laboratory, I am of opinion that the best and safest of all tests is that of experience. We know from evidence furnished us by buildings erected 80, 100, and even 150 years ago that certain materials have stood the most severe of all tests, that of time; and until chemical science has discovered a more reliable one, we must give time and experience the pre-eminence.

Amongst those materials I may safely state that none are more conspicuous and none have more highly distinguished themselves in the war with the elements than Westmorland green slates.

*General Description of Westmorland Slate Quarries; the Method of Preparing the Slates. Cleavage. Architectural value.*—The question of cleavage is perhaps one in which the quarry owner is more directly interested than the architect, but a Paper on slates would be far from complete if no reference were made to this subject, and on this ground I



crave your indulgence while notifying some of the principal points coming within our scope under this heading.

While scientists are mainly interested in discovering the agent or agencies by which cleavage was produced, the quarry owner, on the other hand, is more especially concerned in the character of the cleavage in the particular bed of slate he is working, as on the nature of the cleavage depends to a large extent the value of his bed of rock. This property of slate rock by which we are enabled to split it into thin pieces consists of lines or lamination planes running in the direction of the strike of the bed, and always at right angles to the dip of the rock, but cleavage lines occur at varying angles of inclination from the planes of bedding. In Westmorland the cleavage lines are not so well developed as in the slate rocks of North Wales, where it is possible to split a block  $2\frac{1}{2}$  inches thick into 40 slates equal to  $\frac{1}{17}$  of an inch each in thickness. It would, however, be well-nigh impossible to get from any Westmorland rock an equal number of slates from a block of the same thickness.

As to the manner in which slaty cleavage was produced, I will merely mention that there are two theories—the magnetic and mechanical.

The former was held by, amongst others, Professor Sedgwick, in support of which it is pointed out that the direction of the cleavage being N.N.E., coincides with the course taken by the magnetic currents which are passing through the earth.

On the other hand, it is assumed by a number of eminent scientists that cleavage is due to mechanical forces that compressed the sediment at right angles to the line of cleavage. Dr. Sorby, who studied and examined it microscopically and otherwise, states that the "sediment has been compressed to about one-half of its original bulk, and the particles pressed with their flattest sides towards each other." This arrangement may be seen by grinding a piece of slate thin enough to admit light through it, the particles may be then discerned by the aid of a pocket lens, or to better advantage if placed under a microscope. The specific gravity of Westmorland slates is as follows:—

Green, 277.

Blue, 273.

If all the slates were split to equal thickness, the difference in weight on roof timbers would be very small, whichever kind of slate was used.

The late Bishop Watson gives in his Chemical Essays the result of a series of tests made to determine the weight of a cubic foot of slate, and he found that the difference between a cubic foot of the heaviest and a cubic foot of the lightest of 14 different sorts was only 65 oz., or about  $\frac{1}{13}$  part of the weight of the heaviest sort. The following is a list of the tests:—

	Ounces.
Purple Slate. Kentmere, near Kendal . . . . .	2797
Pale Blue. Coniston, Waterhead . . . . .	2791
Dark Blue. Troutbeck . . . . .	2781
Pale Blue. Thrang Crag . . . . .	2780
Pale Blue. White Moss . . . . .	2779
Deep Blue. Old Cauldron . . . . .	2778
Pale Blue Greenish. Near Ambleside . . . . .	2768
Pale Blue. Ingleton, Yorkshire . . . . .	2767
Dark Writing Slate. Bannisdale . . . . .	2765
Blackish. Head of Windermere . . . . .	2758
Deep Blue. Langdale . . . . .	2752
Greenish Blue. Kentmere . . . . .	2750
Blackish. Cartmell, Lancashire . . . . .	2740
Very Pale Blue (fine grained.) Ambleside . . . . .	2732
Medium weight of cubic foot . . . . .	2767

It is possible that there may be some present who have not had an opportunity of visiting a slate quarry, and witnessing the process of slate-making, and perhaps a few descriptive remarks will therefore not be out of place.

Slate quarries may be divided into two classes, open top and underground. The former, when situate on the hill-side, are generally worked by means of adit levels, through which the slate material and débris are carried out; but when in the bottom of the valleys are worked "pit" like, and the material for slate working, débris, as well as the water, are hoisted to the surface by means of steam engines or hydraulic machinery.

As to the best and most economical of these two methods to adopt, much depends on the nature of the rock, and the amount of "top rock" overlying the slate. If the slate rock be capped with a great thickness of "top rock," it will as a rule be cheaper to work the quarry underground, as the cost of removing this would be so great as often to render the working unprofitable. On the other hand, by working the quarry "close head," or underground, the removal of the "top rock" is dispensed with, but a much larger percentage of the good slate rock is spoiled than in the open quarries, and the work of rendering the roof safe is often very costly.

These are some of the considerations which frequently tax the best energies and resources of the management.

When commencing slate-making it is necessary in the first place to blast the rock from the cliff-side: this is done by means of a hole varying from  $\frac{5}{8}$  to  $1\frac{1}{2}$  inch in diameter, according to the size of the piece to be dislocated. The depth of the hole depends on the distance the first joint or "back" may be from the face. The hole being bored, a charge of gunpowder is put in, which is fired by means of a fuse or short straw filled with small gunpowder, having fixed to the end a piece of "match paper."

The "docker-up" now proceeds to view the dislocated rock, and by means of a hammer and chisel reduces the blocks into smaller and more convenient pieces. They are now loaded into waggons, and either taken out through the tunnels, or hoisted to the surface by the aid of machinery, and delivered in front of the splitting sheds, their final destination prior to being made into roofing slates.

There is a considerable variation in the size of the blocks, and good judgment, only acquired by experience, is necessary to cut them, so as to avoid waste and to the best advantage. Thus a block 6 feet long  $\times$  2 feet wide is cut into two pieces of three feet long each; this is done by cutting a small aperture on one side and applying a series of heavy blows with a wooden mallet on the other side immediately above the aperture; by this means the block is cut in two. It is now ready for the splitter.

There are two methods of splitting in Westmorland, viz. chisel riving and hammer riving, the latter is peculiarly characteristic of Westmorland—the chisel riving alone being in use in Wales. The chisel-river does his work seated with crossed legs, always putting the left leg over the right; any departure from this is considered slovenly and bad form. He now takes a block, and, resting it on his left knee, proceeds to reduce it to thin slates by the aid of mallet and chisel. The hammer-river, unlike his colleague, works standing. A raised platform or bench is provided on which the block is placed, held by his left hand, while, with the hammer in the right hand, he applies a series of gentle blows along the cleavage planes, with the result that the block is reduced into thin slates. This latter method is much more tedious, and on the whole less expeditious than the former, in addition to which it takes much longer time to become a good hammer-river than a chisel-river.

I may just mention in passing that at Collyweston, in Northamptonshire, slates are produced which are prepared in a somewhat novel manner. The blocks, which are usually quarried in the autumn, are placed in a position in which the moisture will most readily percolate into the natural joints. The moisture freezes, and the blocks split of themselves into slates suitable for roofing purposes.

As to the antiquity of the slate industry in Westmor-

land, it is difficult to find any reliable data; but it will be perfectly safe to say that quarrying in a crude manner has been carried out for centuries. It is interesting to find, however, that about 100 years ago slates were sent from a Westmorland quarry for Montague House, Whitehall, the Duke of Buccleuch's London residence, from which we may reasonably infer that quarrying had then attained some proportion, and was being carried on more or less systematically; and it may be mentioned here that when this same house was rebuilt about forty years ago the same slates were used over again, and it was found that they worked out so well that new ones were only sent for the additional area to the roof.

Up to within about thirty years ago the method of quarrying was, however, still rather primitive, and the quantities produced on a limited scale. This was in a large measure due to the difficulties of transit, want of enterprise on the part of the owners, and what was perhaps worse than all, the reluctance of both masters and men to adopt the most improved and expeditious methods of producing. In consequence of this indifference the industry was at one time in great danger of becoming a thing of the past. However, during the last twenty years a remarkable change has been effected in the Westmorland slate trade. The facilities for transit are greatly improved. More energy has been displayed, and more scientific knowledge has been brought to bear upon the working. The newest and most improved methods of production are now employed, with the result that more quarries are in operation, more men engaged, and larger quantities by more than double are produced at this moment, than at any other period in the history of the industry. The outlook for the future is encouraging, the quarries are being deepened, and with increased depth there is always improved quality. The production in the area under our consideration has increased, according to the figures given in the mineral statistics, from 5,309 tons in 1886 to 17,291 tons in 1894. These figures speak for themselves, and point to the growing popularity of these slates amongst architects, and also to unmistakable activity in the slate trade of the northern counties. From an architectural point of view, Westmorland Green Slates are exceedingly valuable. There are no slates with which the architect has to deal that will give more satisfaction and produce better effect than these. They possess all the necessary qualities of a good slate; they are hard—and all good slates are hard, although it must not be taken that all hard slates are good. When struck they will give a clear, ringing sound like a solid piece of metal, whilst the sound from an inferior slate is always dull and thick. Their colour is the most beautiful of all, and, especially when used in combination with any building material of a red or terra-cotta shade, produce a most charming effect. Their lasting quality is proverbial; once a roof is properly covered with Westmorland Green Slates, it is seldom, if ever, any repairs are needed; and when the building has, owing to age or other circumstances, to come down, the slates are as sound as ever, and with a little dressing may be used over again. Their strength and resisting power are very great; it takes on an average 20,000 lb. weight to crush one cubic inch. This quality, in conjunction with their tenacity and elasticity, enables even thin slates to sustain great weight, and gives to them a pre-eminent commercial value for roofing purposes.

In addition to making good slates, the rock is also capable of being worked for other architectural purposes, in the shape of building and monumental stones of almost every description.

Table of Strata.

		Welsh equivalents.
		Upper Ludlow.
Ludlow Rocks	=	Aymestry Limestone.
		Lower Ludlow.
		Upper Wenlock.

Coniston Flags and Grits	=	{ Denbighshire Grits.
		{ Lower Wenlock.
Coniston Limestone	=	Bala Limestone.
Green Slate and Porphyry Series	=	{ Part of Bala, whole of Llan-dilo, and perhaps part of the Arenig Formation.
Skiddaw Slates	=	{ Arenig, with perhaps Tremadoc and Lingula Flags.

*Total production of the different Counties in England, Scotland, and Wales during the year 1894.*

ENGLAND AND WALES—	Quantities in Tons.	Value at Mines or Quarries. £.
Breconshire	—	—
Carnarvonshire	267,083	573,367
Cardiganshire	241	447
Cornwall	—	—
Devonshire	12,095	23,565
Cumberland	—	—
Denbighshire	2,786	5,512
Lancashire	1,524	4,485
Westmorland	14,505	40,507
Leicestershire	10	20
Merionethshire	157,816	509,616
Montgomeryshire	3,257	8,229
SCOTLAND	No returns.	—
Totals for 1894	461,673	£1,171,366
„ „ previous year	438,993	£1,107,626

*Quantity and Value of Roofing Slates exported from the United Kingdom in the years 1893 and 1894.*

	1893		1894	
Countries to which Exported.	Quantities. Number.	Declared Value. £.	Quantities. Number.	Declared Value. £.
Norway	—	—	121,500	1,458
Denmark	2,411,800	23,158	2,852,700	34,211
Germany	30,922,700	141,743	33,465,100	174,351
Holland	308,500	1,012	10,000	27
Belgium	1,044,900	1,120	519,600	427
Channel Islands	523,700	4,243	570,600	4,481
France	1,009,300	1,436	933,400	2,223
Canary Islands	—	—	1,000	48
Austrian Territories	381,800	898	401,500	681
Romania	—	—	10,500	91
Turkey	3,000	31	—	—
Egypt	7,200	49	—	—
West Coast of Africa	13,700	130	2,000	26
St. Helena	—	—	2,400	31
British Possessions in South Africa	500,500	4,101	445,300	3,578
British East Indies	93,700	816	84,600	568
Australasia	1,374,400	9,979	921,500	7,061
British West India Islands and Guiana	97,600	731	27,000	280
Foreign West Indies	25,300	150	22,700	135
Mexico	2,000	8	—	—
Chile	—	—	9,000	40
Brazil	19,000	124	3,600	53
Argentine Republic	—	—	55,000	443
Totals	38,739,100	£203,729	40,459,000	£230,813

*Total production of the different Counties in England, Scotland, and Wales during the year 1886.*

ENGLAND AND WALES—	Quantities in Tons.	Value at Mines or Quarries.
Breconshire	89	£112
Cardiganshire	155	349
Carnarvonshire	250,952	619,493
Cornwall	11,840	21,415
Cumberland	1,954	3,908
Denbighshire	3,016	4,603
Devonshire	1,070	1,055
Durham	1,469	1,005
Lancashire and Westmorland	3,355	6,509
Leicestershire	500	1,000
Merionethshire	144,034	408,181
Montgomeryshire	1,058	2,130
Somersetshire	1,000	2,000
Yorkshire	17,161	8,370
Totals	437,653	£1,080,130



SCOTLAND—	tons	£
Argyllshire . . . . .	17,355	24,639
Dumbartonshire . . . . .	500	1,000
Perthshire . . . . .	700	1,400
	18,555	£27,039
Totals for Great Britain for 1886 . . . . .	456,208	£1,107,169
Totals for 1885 . . . . .	468,954	£1,175,772

*Quantities and Value of Slates exported from the United Kingdom during the years indicated.*

Year.	Number.	Value.
1877	37,565,282	£294,515
1878	24,268,500	204,636
1879	27,801,100	183,915
1880	31,189,500	176,533
1881	38,415,100	212,699
1882	47,366,300	250,226
1883	84,544,400	192,257
1884	49,035,600	251,824
1885	45,482,000	242,484
1886	43,389,700	227,618
1893	38,739,100	203,729
1894	40,459,000	230,813

*Quantities and Value of Roofing Slates exported from the United Kingdom in 1885 and 1886.*

Countries to which sent.	1885		1886	
	Quantities. Number.	Declared Value. £.	Quantities. Number.	Declared Value. £.
Russia . . . . .	—	—	9,540	83
Sweden . . . . .	60,500	571	—	—
Norway . . . . .	19,200	70	—	—
Denmark . . . . .	2,412,300	27,888	1,816,000	19,497
Germany . . . . .	31,279,100	113,952	31,828,700	153,962
Holland . . . . .	397,100	913	301,000	1,004
Belgium . . . . .	373,800	268	567,000	623
Channel Islands . . . . .	595,700	4,139	532,500	3,764
France . . . . .	1,571,500	3,291	790,000	1,113
Spain . . . . .	—	—	7,300	49
Gibraltar . . . . .	1,800	22	6,000	60
Austrian Territories . . . . .	680,900	1,592	1,128,600	3,602
Turkey . . . . .	4,000	75	—	—
West Coast of Africa . . . . .	40,901	259	8,500	74
British Possessions in South Africa . . . . .	291,500	1,646	197,200	1,067
British East Indies . . . . .	69,900	596	6,000	43
Australasia . . . . .	7,191,900	49,581	5,433,800	38,077
British North America . . . . .	—	—	6,000	31
U.S. of America on the Atlantic . . . . .	—	—	31,900	132
British West India Islands and Guiana . . . . .	—	—	14,500	104
Foreign West Indies . . . . .	5,000	41	—	—
Brazil . . . . .	—	—	12,000	80
Uruguay . . . . .	3,000	28	—	—
Argentine Republic . . . . .	252,900	2,366	291,200	2,280
Totals . . . . .	45,482,000	£242,484	43,389,700	£227,618

## PARLIAMENTARY.

### Proposed Removal of St. Mary Woolnoth.

Now that the question of demolishing the Church of St. Mary Woolnoth is again before the public, it has been thought desirable to reprint the petition which the Council of the Institute presented to the House of Commons in 1892, as follows:—

1. A Bill has been introduced into and is now pending in your Honourable House, intituled "A Bill to empower the City and South London Railway Company to make an underground railway to Islington, and for other purposes."

2. On the deposited plan accompanying the Bill, the Church of St. Mary Woolnoth, situate at the junction of Lombard Street and King William Street, is scheduled, and numbered 39 on the plan, with the apparent intention of being acquired for the purposes of a railway station; and under the Bill powers are sought to deal with the property.

3. Your Petitioners, moreover, have learnt from the Directors of the City and South London Railway Company that "If it should be found necessary to remove the structure [of St. Mary Woolnoth] it is proposed to erect it on some site where it can be made more useful than where it now stands, and it is proposed in that case to substitute for it a handsome architectural building."

4. A church has stood where St. Mary Woolnoth now stands for many centuries; and, though the date of the erection of the first church on that site is unknown, a record of the existence of one there in the middle of the fourteenth century is extant. About the year 1677 the church of St. Mary Woolnoth was repaired, partly in consequence of injuries received during the Great Fire of London, the Lombard Street front having been then rebuilt, though the mediæval interior remained. The building, however, was found at the beginning of the eighteenth century to be in so ruinous a condition that a new church—the present one—was commenced under the direction of Nicholas Hawksmoor, a friend and one of the most distinguished pupils of Sir Christopher Wren. The work, which was finished in 1719, has been truly described as an exquisite example of the Italian style of architecture, its interior being in some respects unrivalled by most of the churches erected under Wren's immediate direction.

5. The church of St. Mary Woolnoth is a conspicuous ornament, and one of the historical landmarks of the City of London. By its traditions, no less than by its architectural character, it is recognised as one of the public monuments which impart artistic grace to the metropolis, and which it is incumbent on the present generation to hand down to posterity unimpaired. The removal of the church would destroy one of the most admired features in the familiar view from the large open space between the Bank, the Mansion House, and the Royal Exchange; and it cannot be justified by any object sought to be attained by the Bill.

6. Your petitioners believe that it is possible for the City and South London Railway Company to acquire sites suitable for their purpose other than that of St. Mary's Woolnoth—sites where the needs of a railway station would be less likely to block the traffic than at the immediate entrance of a thoroughfare so crowded and at the same time so narrow as Lombard Street. In this belief, they desire to record their opinion that the removal of the church of St. Mary Woolnoth would be an act of vandalism as unnecessary as it is unjustifiable, and that the substitution for it of a railway station would be inevitably followed by results disastrous to the public convenience.

Your Petitioners therefore humbly pray your Honourable House that the Bill may not pass into a law as it now stands.

### A Teaching University for London [p. 92].

At a meeting of Convocation of the London University on the 21st January Professor Sylvanus Thompson moved a resolution in favour of the early introduction of a Bill for the reconstitution of the University similar to that introduced last year by Lord Playfair, but with an additional clause securing to all bodies affected the right of appeal to the Privy Council on any of the provisions which might be settled by the proposed Statutory Commission. Professor Thompson observed that all the evidence of other Universities which had been enlarged from examining bodies to seats of learning showed that such a development always tended to increase the prestige of the University so enlarged, and to enhance the value of its degrees. Dr. Napier moved an amendment declaring it to be inexpedient for Convocation to express any opinion as to the expediency of legislation for the reconstitution of the University till the views of all members of Convocation had been ascertained. After discussion the amendment was rejected by 466 to 240 votes, and the resolution agreed to.



WOOD-CARVING AND WOOD-CARVERS. By W. H. ROMAINE-WALKER [A.],  
W. AUMONIER, J. E. KNOX, and W. S. FRITH.

Read at the General Meeting, Monday, 3rd February 1896; and registered at Stationers' Hall as the property of the Royal Institute.

I.—By W. H. ROMAINE-WALKER.

WHEN I was honoured by being asked to read an Introductory Paper on the subject of Wood-carving before you to-night, my first impulse was to request that it might be given into more able and experienced hands. But though this excuse would doubtless have been very just if I imagined you expected anything new from me, I was prevented from making it, as I proposed to myself nothing else than to revive in your memories what most of you already know and daily practise. I therefore debated within myself what would be the most useful line to take, and the best mode of dealing with so large and varied a subject in the short space of time at my disposal. Taking into consideration that you will have the advantage of hearing the practical side of the question from the craftsman's point of view in the subsequent Papers, I have attempted only to bring before your notice, in a disconnected sort of way, a few thoughts that have occurred to me from time to time during the course of my practice.

From what I have said you will gather that I do not propose to attempt any learned disquisition on the origin of wood-carving, or its evolution through many lands under divers conditions; but rather, like Rip Van Winkle on the Catskill Mountains, to sleep away



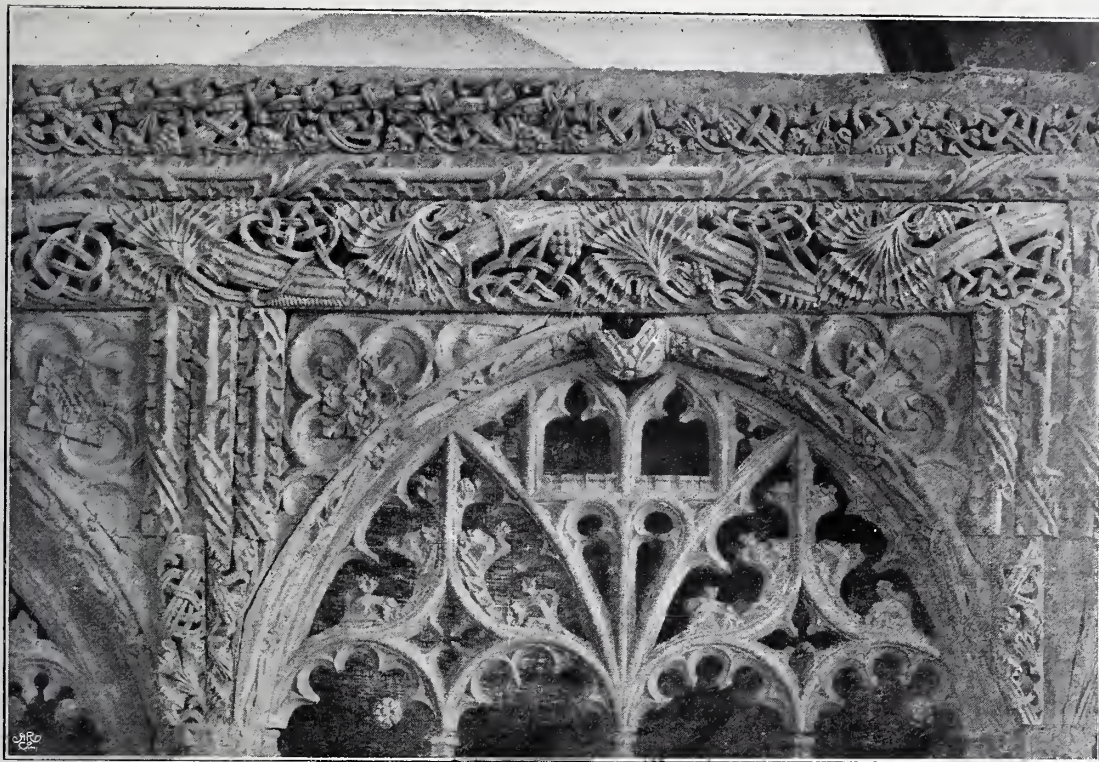
century after century, and only wake to find it in all the beauty of its full development. Nor do I wish to regard it as an art apart, as sculpture may be regarded. I would rather treat of it only as a means in the hand of the architect of putting those delicate touches to his picture in the solid, which shall wake it into life, and arouse in the mind of the beholder a sense of richness, of completeness, and of satisfaction. In other words, I would consider it merely as the ornamentation and enrichment of construction.

Wood-carving being an art the very nature of which brings it within the reach of the million, and, as it were, into their daily life, has been, perhaps, the first to suffer from over-production and consequent decline. "The world is still deceived by ornament." The mind of the public has become vitiated by the vulgar and unmeaning mass of bastard enrichment overloading the so-called "Art Furniture" only too often exposed for sale in shops, and praised, and that highly, by the employes, who affect a critical faculty entirely foreign to their nature and bringing-up. How glibly these speak of Louis XIV., Louis XV., and Louis XVI., and possibly in their sagacity imagine them to be the proprietors of some monster Emporium for "Art Furniture and Decoration," or the directors of a limited liability company, with power to add to their number! Now to the vast majority of mankind these vacuous salesmen are the oracles of public taste; it therefore naturally follows that much of the delicacy of perception which our forefathers possessed has been lost.

It is ever the demand which creates the supply, and so long as there are uncultured patrons who prefer quantity to quality, so long will there be found men ready to prostitute their art and pander to this lack of taste. Would that the public might be persuaded to take to heart that excellent advice of Polonius: "Costly thy habit as thy purse can buy, but not expressed in fancy: rich not gaudy; for the apparel oft proclaims the man." Where, then, lies the remedy? In the first instance, most assuredly with the architect. It may be urged, and very justly, that most of the work I have condemned is not from the hand of the architect. True; but does he always speak his mind, and that with no uncertain voice, when he sees it obtruded into his creation; or does he take care that the carving he himself has introduced into his work shall balance well with the parts, and shall suggest necessity rather than caprice? As the poet uses the rhythmic metre the better to express the flights of his fancy, so let the architect employ carving to raise his simple construction from the land of prose to the realm of poetry.

Examine for a moment one of the examples of a bygone age: how struck one is by the sense of thought and fitness which permeates the whole. Nothing in the ornamentation exists for its own sake: each motif has its part to play in the general scheme;—how carefully is the balance of plane surface and enrichment insisted on! the relative value of light and shade never lost sight of! So that one is led to ask, How has this been achieved? And then follows the inevitable query, Cannot we do to-day what was done in times past? The answer, I think, is not far to seek. The relative position of the master mind, whom we will call the architect, and the craftsman who executes his bidding has undergone a change, and until some modification of these positions has been found there never can be that true unity of thought and purpose which alone can secure the consummation so devoutly to be wished. The first step, then, to the solution must be the closer bond of sympathy between architect and carver, and this in the earliest stages of the design. This brings me to the all-important question of the choice of a carver. Bearing in mind that the result of the union will live beyond the grave—for "men's works live after them"—I unhesitatingly affirm that the only way to arrive at success is to select him as you would your friend. Let him be one the bent of whose mind on the subject between you is most in accord with your own, and treat him as a brother artist and not as a tradesman. If, then, we would prevent ultimate disappointment,





DETAIL OF RESTORED PORTION OF OAK ROOD-SCREEN, SOUTH POOL CHURCH, S. DEVON. FIFTEENTH CENTURY.



PORTION OF OAK ROOD-SCREEN, PORTLESMOUTH CHURCH, S. DEVON. FIFTEENTH CENTURY.



let us consult with our carver while the drawings are yet in the rough. How many blunders would be obviated, how many triumphs realised ! Let us take for example those every-day details which must meet us all — enriched mouldings. We draw the profile full size, and show the motif to be employed in the carving ; but should this be put into execution before we have discussed it with our carver, how often would the candid man be doomed to own that some slight modification would have been a vast improvement ? The sixteenth of an inch more wood left would have given a crispness to the turn-over of a leaf, or the strengthening of one or more of the plain members ; and the consequent subduing, or even suppression, of some of the enrichments would have given greater refinement. I have ever made it a rule to have a few inches of each moulding worked in soft pine and carved before the drawing was finished, and confess many times to have felt thankful to have been able to make some slight modification while yet there was time. This is particularly the case with carved mouldings around a panel, for we must always bear in mind that they will be viewed in four different positions, and the light will strike them on four different faces.

The importance of this preliminary model I hold to be vital with the larger surfaces to be carved, such as panels, friezes, and the like, in order that we may know the most effective relief to give to the carving when placed in juxtaposition with its environment. Six inches square of the most salient feature, in pine, is ample ; unless, indeed, we are using some wood the nature of which we are not sure, and then it is safer to make it the material of our experiment. It has been urged that when funds are limited, by spending money on models we impoverish the finished work. This I deny, and will go so far as to say we oftener save money, provided that the models are but amplifications of the drawings, be they in charcoal, sepia, or pencil, and only made so far as is necessary to show the particular weight, cut, finish, and character we wish to adopt. Again, it is always well to offer up these models to the actual position they will hold in the finished work, and, when possible, under the same conditions of light. Many surprises will be in store for the architect who adopts this plan. Take, as an example, a certain building I have in my mind, where there is an effective band of guilloche enrichment. The right and left of the band have been carved running in opposite directions, meeting correctly in the centre. The result is that from whichever side you view it one half appears to be carved and the other plain. This would have been obviated had the method I have suggested been adopted. I have not touched upon clay or plaster as a medium for modelling, for, though excellent for marble or stone, I hold either of these entirely inapplicable for wood.

The architect should, like the playwright, express his fancy and the object he wishes to develop on paper, giving every possible detail to enable the craftsman to interpret him successfully ; but, like the playwright, he should, after having painted in words the lesson or impression he wishes to convey, leave the exponent of his thoughts certain liberty of action, else will he take from the executed work its soul, and leave it but a lifeless production. Which of us, I ask, can work with the same spirit when he is given a certain feature to introduce into his composition ? The work begins by being irksome, and ends by being a veritable nightmare.

Under the influence of the Gothic architects, wood-carving was the handmaid of architecture, and ministered to her unobtrusively. Witness the sumptuous choir stalls of Amiens as a type of the most ornate period. What is it in them that strikes us most ? It is the architecture : the outline and wonderful massing of light and shade created by a wealth of delicate moulding and intricate tracery ; the rich interlacing lines and gracefully formed arches, relieved by cusps and crochets, pinnacles and brattishing. On these the designer trusted for their beauty. The carver merely heightened the effect by enriching the construction

with carved crotchets, finials, spandrils, and panels. Born in an age when the Church exercised her beneficent sway over the arts, the Gothic carver found his inspiration in the glorious deeds of saints and martyrs, and trumpeted his faith to the world, which even the ruthless hand of the unbeliever has failed to obliterate.

It seems to me that throughout the whole Gothic era the wood-carver was influenced by works in stone, though he preserved a wood individuality; and this influence extended to the joiner also, as may be gathered from the butt, or mason's joint, so prevalent in all early examples, with the return mouldings worked in the solid. My earliest appearance in a Court of Justice, while yet a pupil burning with Gothic ardour, was to fight the cause of the butt joint. These I had shown in the drawings of this my first commission; and though the builder said he thought I was "very young," and so, in the kindness of his heart, had tendered for what he was pleased to call a "proper mitre," I left him discomfited in *amour-propre*—and costs. Again, during the Gothic period the likeness to stone is noticeable in the treatment of spandrils, the carving of which rarely exceeds in its projection the order of the moulding that encloses it, and so through nearly all other features, with the exception, perhaps, of the cornices, where the carved and pierced face was often inserted, taking for its section the opposite curve to the hollow of the moulding. This gave a wonderful play of light and shade, and effectively lent itself to colour and gilding. A small piece of this treatment among the specimens in the room, which I had made in Vienna, as a model of part of the cornice to a sounding-board that was being carried out there, emphasizes what I have said about the value of models. By working the back line of the carved portion to the section given, the carver was unable to get the full rotundity of the acorns and stems; the result being poor and thin. This defect, I need hardly say, was rectified before it was executed.

Let us now turn to a later period, when the carver began to assert himself, and the "handmaid" rose to the rank of sister. When the floodgates of the Renaissance had burst in Italy, it was but natural that the torrent should not be restrained within her borders. One country after another, according to the amount of intercourse they had with the Mother of Arts, accepted the movement. The general interest in classic literature awoke in the mind of the carver the study of its mythology, and from this source he often sought inspiration. Fortunately, indeed, for the Renaissance, there arose the greatest art patron perhaps the world has ever known in the person of Pope Leo X. Born of a family with a pre-eminent knowledge and love of art, he drew around him and developed the genius of the new school. Who can look upon a list of their immortal names without being struck with wonder and admiration? But we must confine ourselves to the wood-carver. Untrammelled by the sordid thought of cost, he gave the best that could be produced, animated, as it were, by the thought, "All things come of Thee, O God, and of Thine own do we give Thee!"

The method of this school is marked by a wonderful advance in refinement, grace of detail, and execution, these appearing in a greater or less degree according to the natural instincts of the nation which adopted it. In place of the freedom allowed himself by the Gothic carver, everything here must bow to rule and precision. How endless the variety! Yet so perfect the harmony that the differences do not attract the attention, except of those accustomed to look for such. The re-introduction of the column and pilaster gave the carver a further opportunity, both in arrangement and detail, and, as if impelled by some unseen hand, wood-carving rose to a height of which man had never dreamed. But the craftsman, like other men, was human, and, having gained his emancipation, was not to be held within bounds; asserting himself more and more until the restraining lines of architecture became



lost in the wealth and exuberance of the carving. This is most noticeable in the sumptuous pulpits of Sainte-Gudule, Brussels, and of the cathedrals and churches of Bruges and Antwerp, the masterpieces of Verbrüggen, Van de Voort, Van Geet, and others, though, in fairness let it be said, over-elaborate ornament, to the detriment of architecture, was not confined to Flemish art.

On the architect, as originator of the work, must fall the onus of deciding what manner of carving he will adopt, and in this, I think, he should be largely guided by the size and



CANOPY TO DEAN'S STALL, ST. PAUL'S CATHEDRAL.

proportion of that part of the building for which it is destined, the height it is to occupy, and the consequent risk it will run. Nothing looks nobler than a large well-proportioned room treated with carving in high relief; nothing looks more overpowering than the same applied to a small low room. Of the many methods at our disposal, let us take the two extremes.

The mention of English wood-carving in high relief must bring to the minds of all but one name—Grinling Gibbons, undoubtedly the greatest exponent of the art this country has ever known, for all the severe strictures he has received at the hands of architects. His creations show an extraordinary knowledge of light and shade, of texture and quality. Note

with what care he interspersed his sharp, crisp foliage and flowers with soft and smooth fruit and waving ribbons; how he gave the impression of great lightness and delicacy, yet ever retained the maximum of strength. But it has been urged against him that his work is mere-tricious, because it was not carved out of the solid, but was "appliqué." Yet we all know this fault, if fault it be, was not confined to Gibbons, but will be found in much earlier examples.

I have had experience of both methods, and while feeling "very superior" in adopting the former, I am not at all sure it is the better in the long run. When dealing with these great projections, the grain of the wood will often run very counter to the design, and the smallest blow, or possibly a natural crack, will show itself in time, and a portion will fall off, and who can guard against a natural crack in a piece of timber 10 or 11 inches thick? On the other hand, when you "build up" your work you allow for the grain to come as you wish it, and I believe the carving done thus to be much more durable. When this mode is adopted, it is always well to have



BISHOP'S STALL, ST. PAUL'S CATHEDRAL.

the ground board sufficiently thick to allow of the deepest part of the carving and the tendrils and those portions of the ribbons in low relief being cut out of it. Of course, the difference in expense is very considerable. Nothing in an English treatment can look more impressive and dignified than a large room, some twenty feet or more in height, carried out in what I may call the Wren style, with columns, pilasters, and large panels, surrounded by bold and vigorously carved mouldings, the whole relieved with Gibbons's carving. It



is needless to say that this style of carving should never be polished ; indeed, when it is good it is impossible. In the early Victorian era it was attempted, but in so doing it was necessary to retain a uniformity of smoothness and a coarseness of detail to take the polish and stand the rubbing ; and to this cause more than to any other I attribute the decline of the popularity of this manner of wood-carving among architects. Now, to take the other extreme : carving applicable to a small room. Apart from the question of proportion and scale, it is from its nearness more liable to hard usage and damage. The carving, therefore, should be subdued in relief, and the subject-matter treated so that it can be grasped when viewed from a short distance. There is such a room at the South Kensington Museum taken from a house at Exeter, a portion of which has been kindly lent us to-night by the authorities. The lower panels are simply but very characteristically moulded. The upper, which take the width of two of the lower, are carved in excellent style, and yet the total projection the carver has allowed himself is one-eighth of an inch. Some Parisian carvers I had over here were much struck with this work and the amount of modelling obtained with so low relief, considering the freedom of execution. There is also a portion of another room, kindly lent by the same Museum, of Jacobean workmanship. This is in simple strapwork. Mark the freedom of setting-out and execution—not a straight line nor a true circle : and yet what a charm ! Were such a piece of work to be made to-day, we should be met by many apologies from the carver, and excuses on the plea of hurry, and possibly many anathemas from our client, whose soul generally clings to mathematical precision and finish. To those who wish the maximum of effect for the minimum of cost, I would suggest a careful examination of these specimens. Again, in punching the ground it is a great mistake to cover it regularly. To be a little sparing with the punch lightens the labour and heightens the effect.

The technical skill of the wood-carver doubtless reached its culminating point of perfection in Italy and France. The manliness and force of the former have been too well studied and appreciated to need comment, but the extraordinary brilliancy and refinement of the latter have not met with that recognition from members of the profession in this country that they deserve. Perhaps to a certain extent it is because the thought of cost must not enter the heads of those who employ them. For example, in the François Premier we often find the upper part of a panel carved, while the remainder is plane surface ; but, mark, the whole of the ground has been lowered to admit of that piece of enrichment, for it is too delicate to admit of “*appliqué*.” The carver often gained additional effect by piercing some of the ground-work, which, though possible in screens, partitions, and doors, is hardly applicable to wall-surfaces. Of the styles of Louis XIV., XV., XVI. I shall have something to say later—suffice it here to record that in them the art of wood-carving reached its zenith.

For carving that is to be gilt, special consideration and a somewhat different treatment are necessary. To these we are compelled by the intrusion of a new element, viz. very strong reflected light. Speaking generally, a little more emphasis is required in the shadows, and the lights should be left smooth or strongly defined, only cutting them up where they begin to reach the shade, but always bearing in mind that even the deepest part must be carefully considered, as much reflected light is sure to reach it. The ground, too, where to all appearances flat, plays an important part in the ultimate effect, and should never be really level, but have an undulating wave in it, the better to catch the various rays of light and give variety of tone. Carving that is to be gilt is usually treated with a fine coating of whitening and thin glue, and this is absolutely necessary where burnishing is to be employed. This is repeated over and over again—in really good work as many as ten times—being rubbed down between each application with pumice-stone and glass-paper, the parts to be burnished receiving a thicker layer. This process naturally takes off much of the crispness and life, and I have always

found it desirable when it has reached this stage to return it to the carver to sharpen and re-vivify. By this means the sparkle so essential is regained. Allow me just in passing to press the claim of red gold size, more particularly when the work is liable to be handled. Should a little of the gold be rubbed, the effect is often enhanced; while with white gold size, which has found favour in this country, the result is exactly the opposite. To ensure success when gold is to be employed, I hold it imperative that the carver adopt one or other of the two extremes, either very high or very low relief, after the manner of repoussé metal-work. The Venetians and the Florentines were the most successful masters in this former branch of the art, having grasped the value of large masses, boldly undercut, and plenty of voids and open spaces to give depth. While these two contended for supremacy of breadth and vigour, the French without doubt far surpassed them in their delicacy of treatment. Nothing can exceed the marvellous beauty and finish of their work, which rose with the appearance in the firmament of that mighty luminary Louis XIV., and set with the ill-starred Louis XVI. Each master vied with the other in producing *chefs-d'œuvre* which rivalled in brilliancy and grace the exquisite ormolu chased mountings of Gouthière and Caffieri. Indeed, during this era the term "allied arts" was something more than an empty name. Architects and carvers, painters and metal-workers, strove, as it were, impelled by one mind and one purpose, and the goal they reached was harmony!

This was truly the age of the palace, reflecting in the lines of its boiserie and furniture the courtly manners of its noblesse. Nor is it likely that the styles of these periods will ever be superseded. Search the stately mansions of what country you will, and under some guise or other they are sure to be represented—be it the pure style of Paris, the somewhat ruder Provincial work, or possibly our own coarse Georgian—proving that manners do not only make the man, but even dictate the lines of his decoration and furniture.

Wood-carving that is to be polished—and this applies to the majority of furniture—should be so treated that all the parts and every face can be rubbed without fear of damage. The moment it becomes necessary to lay polish on with a brush, we may take it for certain that the carving is inappropriate; for be it ever so good, the whole of the feeling and refinement will be irretrievably ruined. Polishing should be done with a mixture of beeswax and turpentine; and after this has been repeated several times, it should be rubbed down with a hard brush. This polish is very durable, and does not mark. The modern French-polish, though quicker and cheaper, is not lasting, and marks with the slightest thing. In the art of carving to receive polish our English masters, the brothers Adam, Chippendale, Sheraton, Hepplewhite, and others, were very successful, for in the greater part of their work they expressed themselves in such a manner that the carving could not only receive real polish, and bear and improve by constant rubbing, but it had the double advantage of being as pleasing to the touch as to the sight. How easy is it to detect the spurious imitations of the masters I have named in almost every case by merely putting your hand upon the carving! I hold it to be a golden rule for the carver, that on furniture, and particularly on chairs, his work must be soft to the touch, and devoid of all sharp projections which would catch and tear lace or other fine materials with which it is sure to come in contact.

Of woods for carving, oak, I think, holds pre-eminently the first place, though for very minute and delicate work Italian walnut may be found better. The dark, or as it is sometimes called "black," walnut has the peculiarity of appearing black or white as the cut is given from the right or left, and therefore to the eye loses the form designed. New Zealand pine is a very fine-grained wood with little or no figure: it is kindly to work and takes polish well. This wood differs much from the ordinary soft pine, which is far too tender to stand hard usage, though delightful to carve. For cheapness' sake pine is often used



under gold or paint, but when it is liable to be touched it is false economy. Honduras mahogany, though a little more costly, is much more suitable. Pear and lime-tree wood, though beautiful to carve, has the disadvantage of attracting the worm, and is therefore unsafe. Cedar is a little apt to split; though pleasing to the eye when left in its natural colour, it entirely changes its appearance under polish.

Carving in whatsoever wood should be executed on the bench, though I am surprised to hear it is often specified otherwise. It gives the carver far greater power and facility to have his work below him, and it is practically impossible in any other position to gain that sharp decided cut so essential to the perfect rendering of wood-carving. Each part should, however, be offered up to its future height and position during the various stages of progress, so as to avoid over-elaboration and consequent loss of breadth. Take, for example, the bosses in a Gothic roof, or indeed any carving at a height; how much better it looks with the broad decided tool-marks, showing the action of the mallet; though very rough on the bench, it has much more quality when *in situ*. I always keep a piece of mirror for testing work in the first instance. Place the carving on the floor, and hold the mirror above your head; the light may be deceptive, but you will have a very fair idea of the general effect. This, however, must not take the place of testing it under its true conditions.

On the young members, whose career is in that most delightful of dreamlands, "the happy by-and-by," I would urge, before designing their first piece of carving, a visit to the studio of a good craftsman. Watch him at work, and carefully note his mode of arriving at the various effects. They will learn in one day what will not be forgotten in a lifetime.

And now, having trespassed too long upon your time and attention, I must conclude; yet with regret that so much has been said that might have been omitted, so much left unsaid that might have proved more useful. Not a word of the wonderful methods of Germany and Spain, of China and Japan, Scandinavia and Russia, India and Persia, and other countries who have given to the world artists whose names may have been forgotten, but whose memory is for ever inscribed and graven on the wood they loved.

## II.—By W. AUMONIER.

I AM not unmindful of the honour paid me in being invited to read a Paper before so distinguished a body as the Royal Institute of British Architects, and shall do my best to fulfil my task; but it is not easy to know how best to treat a subject so large as wood-carving. For instance, should it be approached, by one who, like myself, has been amongst it all his life, from an historical point of view, or from a practical standpoint?—as to what are the proper characteristics of wood-carving as an art by itself alone, or as compared with other kindred arts? Now, as I am sure there are gentlemen in this room to-night who are much better equipped than I am myself to treat the subject historically (although I have seen a considerable quantity of carving which may be called historical, executed from about 1300 years B.C. through all ages up till to-day), I have come to the conclusion—and I fancy I shall have your approval in this—that I ought rather to consider wood-carving for its characteristics and treatment than for its history and dates of production.

But, although I hold these views, I must ask to be allowed, before I proceed further, just to call to mind some—a very few—well-known examples of old work which possess in their different ways all the true character and treatment we should look for in wood-carving. I mean, if you bring the eye of your memory back to dwell for one moment upon, in England say, the original work in Chester Cathedral; that in the chapel of King's College, Cambridge,

and in the choir of St. Paul's Cathedral ; in France, to the work in the choir of Amiens Cathedral ; and in Italy, to the early work of Sant' Ambrosio, Milan, and that in Santa Maria in Organo, Verona, you will see at once that you have at least something to go upon, and something to talk about, something spread out before you like the leaves of a book, "to read, mark, learn, and inwardly digest."

The choppy, vigorous cut of the Chester and Ambrosio work, where the carver was evidently first-cousin to the village carpenter who made the work, only just emerged from the use of the chisel proper to take up that of the carver's gouge ; the grace and wealth of design and workmanship in the work at Amiens ; the masterly technical skill and sumptuous design in that of St. Paul's, and the glories of Fra Giovanni da Verona's achievements (whose whole work seems to palpitate with the warm life vanished hands created many years ago)—all these combine to teach us what we would know of wood-carving as an art, to show us what has been done before, and may perhaps be done again.

The mere mention of these examples naturally brings me to discuss the treatment proper to the art and the characteristics of true wood-carving. I think all the beauty should be evolved out of the material itself ; being wood, it should retain the characteristics of wood, and not be made to represent marble, bronze, silver, or any other material. Depend upon it, it is quite capable of taking care of itself if properly treated ; and by the very individuality of its treatment it may attain a charm and beauty equal to that of almost any substance the hand of man can fashion into art.

To this end we want it cut by a strong man, fully alive to the capabilities and susceptibilities of his material. If he is a good workman, he will combine freshness and grace. Freshness, because the work grows under his own hand, untrammelled by any mechanical appliance ; he will show his cuts and gouge-marks in it freely and fearlessly to the last, to mark for ever the secret of its birth, like the last strokes of the painter's brush on the canvas which he has made his own by individuality of touch ; he will concentrate his mind on the firm sweep of the gouge over all, tenderly treat the thin and delicate parts which fade into the ground, and boldly undercut his projections, even to the extent of cutting right away in places to make the work stand out free, so that it positively dances on the ground with delight ! And he will give grace, because there is no form the artistic mind can conceive but may be obtained in wood, if honestly sought after. The work should always be, or appear to be, carved out of a solid block ; aiming at broad lights and sharp shadows ; the high parts comparatively smooth, or at least little disturbed by modelling, to catch light ; the depths rough and choppy, the better to hold shadow ; the ground by no means absolutely flat or smooth, but deepened in parts where strong shadows are required to strengthen the effect ; and the relief so managed as to incorporate the ground and the work together as much as possible. And if we have invention and lightness combined with breadth and strength into one harmonious whole, the work sparkling with gouge-cuts to give it texture, I think we have the essence of wood-carving.

*All carving to be treated according to the position it is to occupy.*—Not only the design, but the actual carving itself, should be carefully considered, with a view to the position it is to take and the light it will receive. Thus, even if quite close to the eye, where of course its position warrants or demands a certain amount of finish, it must be remembered that real finish rather means perfection of form than smoothness of surface, so that even there it should still show its cuts and its tool-marks fearlessly, and be deepened in parts to make it tell its proper tale in the combined scheme of decoration ; while if it is going a great height or distance from the eye, it should be left as rough as ever you can leave it. The only points that have to be regarded then are the outlines, varieties of planes and depths ; and if these



be properly considered everything else will take care of itself, and then the whole work cannot be left too rough. Its very roughness and choppy cuts will give it a softness and quality, when in its place, that no amount of smoothing or high finish can possibly attain to. Any effort towards more than this, or "finicky" striving after accuracy of detail, on work once treated in a rough, masterly manner, according to its position, will not improve its effect, and is more than likely to result in disastrous failure.

Again, to do work in this spirit the carver must be "free." He must not be under the everlasting dread that the architect is coming with his brass compasses to measure up his work and find it wrong. His fancy must be allowed some scope to soar, his gouge some little play to slip and make mistakes; and if in the end he find his work has faults, let him rejoice, for these are the stepping-stones to future success, the shaken dewdrops fresh from Freedom's wing. In such a craft as wood-carving your faultless work too often leads to death in art.

Now as to the best method of going to work to produce the desired effect. Unless you are strong enough, or are left freedom enough by your architect, to chop boldly at a block without any particularly preconceived design, but designing as you go on—and in this way some very fine work may be produced—I think it is best to work from drawings—rough, full-size charcoal cartoons, which give the effect wanted by their light and shade. I strongly protest against the too frequent use of clay or plaster models, because they are often worse than useless, and not infrequently absolutely immoral in their tendency, because they absorb time and money which ought more legitimately to be spent on the carving itself.

Models may be of some service, if a complete piece of architecture be set up, to consider the carving in conjunction with the architectural features, and so help the architect to consider his design; but I more than question the necessity, or expediency, of specially making them for carving alone. A fresh piece of wood-carving executed without a model is distinctly a created work. It has sprung from nothing, it has never been seen before, and has been created by the touch of the carver's hand, and as such has a value of its own. You all know the sculptor's saying, that "Clay is the life, plaster the death, and marble the "resurrection." But we cannot afford these three processes in wood-carving. We want the life to spring at once into the wood direct from the first inception of the design in the carver's brain. If you want to know how far away from art the dull copying of models will lead, you have only to look at the ghastly array of white marble images on tombs one sees in some of the old churches. These have all been copied from models. Once put a full-size model into a carver's hand to copy, and he easily sinks to the level of a mere copying-machine, losing the power of concentrating his mind on his work as an art, only to retain the skill of making an accurate copy of the dead plaster he sees before him. Remember, too, that at the best you can only have a translation of a model in wood, because some effects which are easily obtained in clay by a skilful modeller belong to that art alone, and not to wood-carving. But give the carver a rough charcoal drawing to work from, in which is shown in a broad and direct manner the relative heights of the different planes, the general effect of light and shade sought for, and he has to exercise all his ingenuity from the first to the last to interpret it. He has to keep his wits about him all the time, and has an opportunity to use his imagination and fancy with a certain amount of freedom in details, by following out and developing accidental forms and cuts which keep arising and suggesting themselves in the progress of the work. By following this course I think you get more freshness and feeling in the work than is possible to be obtained from the mere copy of a model. Besides, there is the question of expense, which will always arise; and I do protest against the sin of wasting money on models, which are often worse than useless, if made by men other than carvers, when put into the hands of really competent carvers to carry out. If the carver

is so feeble as not to be able to carry out his work from drawings, let the money about to be spent on models to guide him be rather lavished on the actual carving itself by putting the work into more skilful and stronger hands. There are such to be found, I am convinced; and if the architect is not capable of judging from drawings what the ultimate effect of his carving will be, let him leave a man who has really studied and mastered his art to interpret it as he knows how. I speak at some length on this part of my subject because I have known many cases where architects have spent a lot of money on models, made perhaps by skilled men, but still only modellers, knowing little of the character proper to wood-carving, and the money so spent has had to be screwed out of the carver somehow, although his was the actual work to live, good or bad, for hundreds of years. Of course, in working from a drawing, care must be taken, in the first place, to decide which are to be the highest points in the design, and then to work away from them until the whole work is brought into a pleasing effect of light and shade.

*Suitability of Design.*—All drawings should be studied at the same distance from the eye that the finished work will be seen, and be designed especially for the place and position the work is to occupy. They should aim at a broad and vigorous treatment of light and shade, and less regard need be paid to small details, which can be better worked out on the carving itself towards the finish, because many of the parts will become different in size from the drawing, owing to the varied planes and angles into which they naturally fall in treatment. If the work is going up any considerable height, care should be taken to keep the drawing open in arrangement, as the tendency is for the projecting parts to appear to fill up the voids or grounds in looking up at the work, giving it a crowded effect. If the design is embodied in a model, it is more than ever necessary to place it, not only at the right distance, but also at the right elevation from the ground. In fact, what is really valuable in the case of either drawing or model is that the design should be judged in as nearly as possible its actual position, with all its surroundings just as they exist.

I have purposely avoided speaking of any particular style of work to exalt it above all other, because I think we shall only get into endless muddles if we enter into a controversy about styles in an evening solely devoted to wood-carving—a craft that has left its mark on all styles and all periods in which art has beautified the world. I respect all work honestly done to bring out the capabilities, and to adapt itself to the limits, of the material it is wrought in.

Now I want, if I may, to say a word to architects as to the way to treat their carver when they have caught him. I claim that they should treat him as a brother artist or craftsman, in sympathy with the work in hand, called in to give artistic finish to their buildings; and not as a person out of whom is to be screwed as much work as possible, for as small an amount of money as their conscience—or their client—will allow them to give him. There are many, I am proud to know, who act up to the higher standard. And if there are some who follow the other course, they are working for the degradation alike of art and life, and against the growth of all the nobler ideas one would expect to see fostered in the Royal Institute of British Architects.

Do not be too much concerned about the prices you hear have been sometimes paid for old work. Never mind Mr. Ruskin when he fishes out for your delectation the fact that the whole of the beautiful work in Amiens was carved for about £400 sterling. Remember that the value of money was very different then from now. What if Jean Turpin preferred to live an arcadian life in the fields of Picardy on his three sous a day? He set a bad example by so doing. Noble work like his deserved a nobler recognition. “The labourer “is worthy of his hire.”



In conclusion, while thanking you for the kind attention you have given me, I feel I should almost apologise for having spoken at any length on the subject, because the art of wood-carving is so well known among you that I think all sympathetic minds must look for the same characteristics in it as I do. My excuse must be that I love my work, and have sought in it artistic sustenance and inspiration for many years—as a child looks for material support from his father. And it is the wish of my life that it should more and more shake off the dull thrall of mechanical reproduction, and put on something of the beauty and the mystery that belong to art—something of that charm it is her gracious privilege to weave for all who rightly woo her.

### III.—By J. E. KNOX.

**A**S an architectural wood-carver it is necessary and better for me to treat this subject as if one were really talking in the workshop, for a carver is about the last person to talk of carving in the manner of the lecturer, and is, like other practical men, inclined to drop into the personal. This, I am afraid, will be my failing. There are gentlemen here, however, who will probably tell you of the beautiful carvings by Gibbons and others, so that perhaps my experience, with a little practical demonstration of my method of carving, may not be altogether uninteresting to you.

The essential requirements of a wood-carver are:—First, a strong firm bench, the top of which should be of beech, and at least 4 inches thick, 2 feet wide, and 4 feet 6 inches long; secure, but simple, methods of fixing his work. And, secondly, a good light. Of tools or gouges he requires a very large number, necessitated by the variety of designs that may come to him for execution, nothing being too large or too small for a carver to try his skill upon, let the result be what it may, and naturally the tools vary in size according to the work in hand. Repetition work, as a matter of course, needs only a few tools, sufficient to carry out the design, or want of design as the case may be, and a variety of about two dozen would suffice for this purpose. A wood-carver, among his qualifications, should be able on an emergency to make, harden, and temper his tools, and repair a broken or make an exceptional tool he may at any time find necessary for his use. You will probably be surprised to hear that learning to sharpen a good kit of wood-carver's tools properly, and in good working order, takes the apprentice or novice really longer to acquire than actually learning the use of them. For the harder woods a less acute bevel or sharp is required than for the softer woods, every gouge used by the wood-carver being, by the sharpening, a fine elongated wedge of innumerable sections.

Of course, it is generally understood that nearly all woods are capable of being carved, oak, however, being mostly used for architectural purposes. Italian walnut is liked by the carver. It is tough, firm, and reliable for projective or undercut work, or for fine and delicate carvings. A great deal of the foreign wood-carving is executed in lime, apple, and pear tree, and other soft woods. All these are very pleasant to work, but are liable to worm and dry-rot.

Wood-carving in England for the last thirty years has been striving to raise itself above the cabinet and upholstery incubus, into which it had fallen for many generations, and efforts have been made by the establishment of the British Wood-carvers' Society, a body of craftsmen far too little known by kindred societies, to regain the position wood-carving held in the seventeenth and eighteenth centuries. There is a tradition handed down among wood-carvers that in those days members of the craft were highly esteemed, and were permitted to wear swords; but I can assure you there are British wood-carvers of the present day doing very ordinary work, but who are quite equal to the men of the seventeenth or eighteenth

centuries, and who only lack the opportunity to exercise their knowledge and skill at the craft.

Wood-carving is an absorbing, fascinating, but a time-taking occupation, and the results of his labour are, as a rule, gratifying to the executant, whatever his architect or client may subsequently think of his work. One of the chief drawbacks a carver has to contend with is the limited time generally at his disposal for the proper consideration and execution of the work. It often happens that he is compelled to complete, not that his work is quite satisfactory to himself, but because of urgency on the part of builder or client; or, on the other hand, he may have expended all the time the price in his estimate will allow without bringing his remuneration down lower than a dock-labourer's—which is easily done—and only an expert could detect the difference in the quality of work. As a fact, a few years ago myself and staff worked for several months on a job, at the completion of which I was not one shilling the better off, simply because it was nice work, and I would not stultify myself by putting in an inferior quality. Many years' practice is necessary to enable one to estimate readily the cost of carrying out a design which might bear two constructions, viz. either very simple in treatment, or full of fine details and exceedingly rich. It is this estimating that frequently floors the carver. I know men, middle-aged, and carvers all their lives, quite unable to estimate their work, their guesses being either ridiculously high or absurdly low.

Many people think the craft is a very limited one. This is not so: there are quite a number of wood-carvers who for want of constant employment drift into other occupations, and who only turn up when there is a big job going, or a spurt in trade; and it is surprising to note the falling off in aptitude this change or enforced idleness causes, for a carver needs unlimited practice to be smart at his work. To my mind there are few occupations where the work shows so quickly a want of knowledge, carelessness, or indifference on the part of the worker. If a carver has no energy or "go" in him his work shows it. Constant application and studying the old examples give one great facility, and enable the carver to appreciate promptly anything that may be placed before him to carve.

I have known some very clever carvers indeed who did beautiful work in a style of carving congenial to their fancy, but floundered painfully when knowledge of character or other styles was required. I early saw that cleverness of this sort did not bring much grist to the carver, and determined to remedy in my own case what I considered a failing on the part of others; and this resolution was confirmed after a brief spell of trying to live as an artist, for such in my youthful enthusiasm I conceived myself to be. I carved birds, flowers, miniature figures, and many pretty things besides, and although greatly admired, nobody wanted to buy them. About this time I happened to be looking through a volume of poems by Austin Dobson, and came across one entitled "The Caliph and the "Carver." Reluctantly I took the Caliph's advice, blossoming eventually into an employer, I suppose in consequence.

As a matter of fact, my attention was directed by force of circumstances to another view of the subject, and, making a fresh start, I began by visiting the different cathedrals and churches remarkable for their carvings, noted the styles and peculiarities of each, and quickly observed that the old carvers worked with a thorough knowledge of the effects produced by a quantity of simple carvings added together. This is more particularly observable in late fifteenth-century work, the choppiness of which has influenced me no doubt in my development, for I very much admired the *gee* in this style of carving, and the apparent fact that the carvers knew when they had done enough to their work, for one rarely comes across a specimen of the period that seems to have had an hour's time too much spent upon it. I have frequently the greatest difficulty in impressing upon assistants that good carving does



not consist entirely of very clean cutting, or making their work look like "carton-pierre." This applies, of course, to architectural carvings. All the same, I can thoroughly appreciate and enjoy a beautiful or highly finished piece of wood-carving as a specimen of craft work only, for one recognises the enthusiasm of the worker and what close application the work has involved.

Before finishing this brief paper I should like to say a few words on a matter that comes under my cognisance as a wood-carver. I refer to the mistaken notion prevalent among pupils of the wood-carving schools so popular now, that by their attendance at these schools they are learning a profitable trade, because from a wood-carver's view the very elementary instruction given is only sufficient to enable people with leisure to while away their time pleasantly. But when young men come to me seeking employment, saying they have had several months' lessons at a school, and are willing to accept from £2 to £3 a week wages for a beginning, I cannot help feeling they have been misled and their time wasted. One young man, whose name need not be mentioned, told me he had had six years' tuition at a school of wood-carving, and besides taking money prizes had won a gold medal for his work. Thinking one might be helping a future Sir Francis Chantry, I gave him employment and encouraged him in his work. Very shortly, however, he told his fellow-workers that he "wasn't in it," that my shop was a revelation to him, and, on realising his position as a competitor for a living with ordinary carvers, he threw up the sponge and enlisted for a soldier. A proper apprenticeship in a wood-carver's shop, in my experience, is only just sufficient to qualify a young man to get £2 a week wages, and then to hold his own he must ever be on the alert for self-improvement. There is a wide field for improvement open to the ordinary wood-carver, whose necessities induce him to obtain employment, however incompetent he may be for the class of work in progress.

Pondering over the subject—and I offer the suggestion—one cannot help feeling what a lasting good might be done for the present and rising generations of wood-carvers if a learned body like the Royal Institute of British Architects could see their way to giving free lectures on the various styles and characteristics of wood-carving to members of the craft. Lantern views of photographs of the best examples at different periods, with an intelligent explanation of each style and its peculiarities, would be of very great advantage to craftsmen, as there are no technical schools, I believe, which teach on these lines. At actual wood-cutting they are already proficient. I would also venture to suggest that these lectures should be printed, and sent out to be given at every Architectural Society in the kingdom, and the same course repeated every succeeding winter.

One of the City Companies has taken a step in the right direction in offering prizes, both to apprentices and adults, for specimens of wood-carving; and this is a very good thing in its way, but the lack of definition robs the good intention of much of its value. It would be much better, in my opinion, from an educational point of view, to specify a recognised style than a go-as-you-please, nondescript production. For there is no carver of whom I have ever heard who is capable of evolving a new style; and to attempt to carry out a job on feeble invention, a conglomeration, in fact, resulting from his own experiences, which can rarely be satisfactory, is but to court failure. Neither is the result, when the work is carved to the architect's full-size drawings, bound to give satisfaction; for often the carver, in his anxiety to faithfully and correctly interpret the designs supplied him, loses his freedom, and the work, in consequence, is generally hard and unsympathetic.

The following are a few examples with which a wood-carver should be familiar, and will doubtless satisfy you that I have not taken a pessimistic view of the subject in regard to schools of carving:—

Norman Zigzag.—Example: Rochester Cathedral. Early English of eleventh and twelfth centuries.—Example: Choir, Westminster Abbey. Decorated, thirteenth and fourteenth centuries.—Examples: Lady Chapel, Ely, and Choir, York Minster. Perpendicular, fourteenth to fifteenth century.—Example: King's College, Cambridge. Tudor, 1550 to 1600, a rude style of Perpendicular.—Example: Thornbury Castle, Gloucestershire. Jacobean, 1600 to 1650, a medley of Classic and Gothic.—Example: Longleat House, Wilts.

The five Orders, as a matter of course; The Italian and the French Renaissance; Dutch and Flemish Ornament; French and German Gothic.

A knowledge of the Apostles, saints and prophets, the Evangelists and their emblems, will be useful to the carver; also of the Greek and Latin Fathers, the Cherubim and Seraphim that “continually do cry.” He must study anatomy and botany, must know something of heraldry, &c., and be able to carve at short notice any animal that lives “in the heavens above, or in the earth beneath, or in the waters under the earth.”

#### IV. BY W. S. FRITH.

**W**OOD-CARVING, regarded from the purely technical standpoint as the art of cutting the material delightfully, is necessarily intermingled with the consideration of the position occupied by wood-carving in the art of sculpture: How it should be carved suggests, why should it be carved at all? what rules govern the work? and what is the standard of excellence that should be set up?

The over-use of the dividing terms wood-carving, stone-carving, modelling, &c., leads to the mistaken apprehension that sculpture is practically limited to objects of a fragmentary or isolated character; it also encourages the use of a term to which frequent objection is made, “architectural decoration”—a term which is bad, for architecture worthy of the name does not require decoration. But no architecture worthy of the name is other than gracious to the sister, sculpture; for surely the beauty whose charm is grace is dear to the beauty whose charm is strength.

Wood-carving is not sculpture, neither is any other member; but the whole body complete in all its members, wood-carving, stone-carving, modelling in figures, ornament; and whatever works for the beauty of form not constructive is a constituent part of the art of sculpture, the sister art to architecture; and each great period of the art shows forth this again.

Wood has always been a sculptor's material; there is little doubt, indeed, that it is the most ancient, but has for certain purposes given way to other materials which have more completely met the requirements of the art. It has not the dignity of marble or bronze, or the evenness of texture and colour which enables these materials to convey refined delicacy of form and expression. In marble or bronze the material allows the form and expression to dominate, to seize and hold the attention quite unimpeded by questions of material; while in wood the grain and colour are always so marked that delicate expression is more or less diverted by them. On the other hand, the texture and warmth of wood are qualities so agreeable that it is pre-eminently the comfortable material, the one above all others suited for what I may call architectural furniture, that which fits the building as a structure sustaining weight and giving space, with that which makes for intimate physical comfort; and the office of wood-carving in this connection is to provide objects of interest, to give variation of texture, and otherwise to contribute to the grace and beauty.

Although the refined degrees of facial expression are unsuitable to production in wood, the lesser degrees of excellence in sculpture are by no means excluded. It is essentially the



material for the display of imagination and fancy, and the whole wide range of subjects that belong to the more playful phase of the art. The expression of action is distinctly invited. Groups or ornaments with projections and perforations, which would be inappropriate to stone or marble, are quite fitting in wood; and its lightness, as far as can be obtained without fragility, gives a charm which the silky and variegated texture heightens. The knowledge that the object is not friable on the one hand, or chilling to the touch on the other, conduces to the quiet enjoyment of the work.

It is a little difficult to understand in these days, when large sums are expended on furniture of the upholstery species, that there seems little demand for choice wood-carving beyond the foliage order; no doubt this is in great part due to the fact that wood sculpture does not conveniently lend itself to production from the clay modelling point of view, from which most sculptors both here and abroad are trained.

A fine piece of wood-carving cannot be produced entirely on this basis, for it can hardly be a simple fac-simile of a clay model. I have personally never known a modelled work that did not require some treatment essentially of the wood. At the same time, there are a great many things that can be safely dealt with by modelling alone, where relations of parts have to be determined, and in the case of figure-work especially, as there are very few wood-carvers who have received a sculptor's training. This might be passed over if it did not mean a serious artistic fault, for wherever the human figure is used, due importance must be given to it; and how can this be done unless knowledge of its form goes with knowledge of the material in which it is to be represented? of how to enforce the form by judicious variation of shapes and textures? of contrast of broad and cut-up surfaces? of where the surface should be smoothly cut, and where the tool-mark would add to the effect in accordance with the qualities of the wood used?

With reference to this, while oak is the principal wood for carving, others have to be considered; and if the treatment of oak were, for instance, applied to satin-wood, the result would be to make the satin-wood look very much like pine. In this case the work looks most precious when it is so designed and carved as to permit the opalescent quality of the wood to sing through the carving. In other woods very bold or very delicate work tells better than that of medium depth.

On the question of how far the cutting of the wood should be evident, as a general rule, figure form is most satisfactory with the tool-marks invisible, since the form is the essential, not the manner of producing it; and this rule necessarily applies wherever exact form is desired. The clear cut, however, best displays the quality of the material, the mastery of the craftsman, and his delight in his work, and makes that in which the dexterous use of the tool can be traced one of the most charming phases of wood-carving.

The question of style of design is probably outside the range of the present discussion, except in so far as it illustrates the range of effects obtainable and fitting for production in wood. As these extend from mere incision to sculpture of a high order, a very wide range indeed is obtainable. For strong, vigorous work, that of the Perpendicular period is probably the finest, admirably adapted for use in large buildings, cut in a free, rich, and broad manner, scaling admirably with the vigorous architecture of the period. The work of the Renaissance order illustrates how figure and ornament form can combine, and how any degree of scale or of elegance of treatment is obtainable.

The yearning to invent something quite new is particularly fascinating to the mind of youthful cast. Whether this is possible in these days, with so great a mass of past experience influencing us—for influence us it must; or whether it is wiser to trust to developing suggestions of themes contained in past work—and it teems with suggestions—the artist must deter-

mine for himself. But past experience is at any rate a fairly safe guide; and if the artist can but grasp the meaning of the lessons there of light and shade, line and relief, composition and execution, he will be well provided with the knowledge that should enable him to produce work that need not be shamed by the excellent examples that have preceded his.

Mr. HUGH STANNUS [*F.*] said that as in addition to the very interesting, scholarly, and, in some cases, poetical addresses they had just heard they were to be favoured with some practical demonstration of the interesting art of wood-carving, he would not occupy the time of the Meeting. He supposed that the gentlemen who had brought the craft before the meeting in so charming and thorough a manner were selected by the Art Standing Committee. It was a further illustration of the valuable work accomplished by that Committee, and the Institute was indebted to them for arranging such meetings, and especially for having brought the present subject forward. The Meeting was also favoured with a most interesting collection of examples from South Kensington, which, he gathered, had been lent by the Committee of Council on Education at the request of the Institute. He would move that a most cordial vote of thanks be passed to the authors of the Papers, and also to the South Kensington authorities and others for their kindness in lending so many interesting examples.

Mr. BANISTER F. FLETCHER [*A.*] said that, as an Associate representing the younger members of the Institute, he could only say that they echoed every sentence that had been uttered as to the desirability of bringing the architect more into touch with the craftsmen. On the question of models, he did not see how architects could know exactly the relative value of light and shade in their carving unless they had some sort of model first. Therefore, although from a wood-carver's point of view it might not be desirable to have a model, from an architect's point of view he thought a model should be insisted upon, always bearing in mind that it was in a plastic material, while the finished result would be in a fibrous one. The wood-carving schools and the Carpenters' Company's School had been referred to, and it was said that they did not turn out very good men. That might be; but still they had helped to further the general standard of technical ability to which they had attained. The result might not be visible immediately, but it would be in course of time. He thought with Mr. Frith that it was absolutely essential that all craftsmen should study ancient style; not, however, as he had suggested, for the purpose of reproducing it, but simply for the knowledge to be gained in a technical way. In a literary sense, although one studied the works of Chaucer and

Shakespeare, and the later works of Pope, Addison, and Swift, in order to form a style of one's own, it would rightly be considered a piece of pedantry to try to write in the same strain as the old masters. In the same manner it seemed to be evident that no one in the nineteenth century could produce a real copy of anything in the fourteenth century, and it would be very unwise for him to try to do so, besides fettering his natural inclination as to design and turning him into a mere machine. In St. Paul's that day they had discussed the question of Grinling Gibbons's work there, and the opinion was expressed—and doubtless they would all echo it—that as specimens of wood-carving of that type they were probably unequalled in the world. If they were to develop that style of carving, it should be developed on the English lines—as far as possible from works of their own masters in the craft.

\* \* The proceedings closed with some practical illustrations of the wood-carver's methods of working, given by the authors of the second, third, and fourth Papers.

\* \* Exhibits from South Kensington Museum included choice specimens of Italian, French, Spanish, Flemish, and German work (fifteenth and sixteenth centuries); oak screen (fifteenth century) from a house at Exeter; carved oak door (*temp.* Louis XII.); oak-panelling, pilaster, and capital (English, sixteenth century); specimens of mouldings (eighteenth century); chair carved by Sheraton, and many other notable examples. Mr. Duveen lent a carved and gilt bracket (Louis XIV.); a carved and gilt throne (Louis XV.) designed by Caffieri, the centre portion of back representing a Chinese subject; and a carved and gilt console table (Louis XVI.), the stretcher surmounted by doves and garlands. Several specimens of very delicate Louis XVI. panels were lent by Monsieur Mellier; and a finely carved mirror-head representing the fable of the fox and stork, the turnover of the foliage taking the place of the cornice, was lent by Mr. Bull. Mr. Romaine-Walker lent a German "miserere" in high relief, and two late Gothic panels from Sedbergh Church, Yorks. A large collection of photographs was shown by Mr. Aumonier.

\* \* The headpiece [p. 200] to the foregoing Papers is from a photograph of a carved wood panel in Evreux Cathedral.





9, CONDUIT STREET, LONDON, W., 6 February 1896.

## LORD LEIGHTON, P.R.A.

*Hon. Fellow, Royal Gold Medallist.*

It is not too much to say that the death of Lord Leighton is a national loss. In his characteristic and distinguished personality the English art-world was summed up and represented in a very remarkable way. For us architects the death of the titular head of the allied arts must always be a matter of moment, because by that alliance we set much store; but to-day we are moved by something stronger than the sentiment that such a reflection evokes. It is the man we deplore, the artist of wide and generous sympathies, who for seventeen years has filled that place so honourably to himself, with so much benefit to art at large.

We are apt to think with regret, and with reason, that the interest of the average painter in architecture, and in the body which officially represents it, is of too Platonic a cast; but our Gold Medallist of two years ago, the latest of our Honorary Fellows, was the most eminent of those who clasped responsively the hand of comradeship which we held out, as he was the first to do so. We were glad when we could welcome him within the walls of the Institute, but, if his presence was pleasant to us, it was by his treatment of what is nearer to us than ourselves—our art—that he won our hearts.

He taught us to expect as a matter of course that a practical exponent of painting and sculpture should, when every other year he made his Address to the students at Burlington House, devote a large part of it to architecture. To have done so in a shallow and perfunctory way, to have accomplished a mere duty, would have been far worse than silence; but his consistent thoroughness in work, that curious felicity of expression which seemed to make old things new; above all, his rich endowment with the sympathy which begets understanding—all these were guarantees that what he undertook he would do well.

The point for us was not that he supported this or that theory, or cleared away the cobwebs here and there, but that he could not have done what he did unless he had been inspired by a real love for his subject. It was not a simple intellectual

question; it was one of affinities; and so it comes about that one is prompt to believe anything one hears which may suggest that he himself gave architecture, as we do ourselves, a sort of pre-eminence. The latest story belongs to the few weeks since his name was gazetted for a peerage, weeks coloured now for us by the tragedy of which they were the ushers, and represents him as chatting with some of his colleagues about the supporters for his coat of arms, and drawing down their amused wrath on his head by declaring that architecture would stand by herself as one. The lightest badinage sometimes covers a real conviction; whether it was the case in the present instance, who will be bold enough to say? But we would fain think so.

It was natural that we should regard him as something more than a merely nominal representative, and be content to rely on him in those larger æsthetic questions in which all professors of art are interested. He was ever ready to champion the cause of the right and to break a lance with Vandalism and indifference. When Richmond Hill was in danger his active interference did much to save it. To particularise would indeed be tedious; but let us never forget to be grateful to him for having rescued Stevens's masterpiece from the seclusion of the Consistory Court; for, practically, he bore the whole burden of the work on his own shoulders; and could we but crown his endeavour by the completion of a work which cries aloud for the crowning glory of its heroic horseman, it would be at once a recognition of his aims and a fitting memorial of the man.

Lord Leighton's career has long been public property, and never has a calm self-confidence, such as he was wont to express in his student days, been more completely justified in the event. Essentially a modest man, the determination to do himself justice yet assured him, as it assured Benjamin Disraeli, of ultimate triumph.

From his twenty-sixth year, when the great canvas, sent rolled up from Italy, was hung on the line in Trafalgar Square and bought by the Queen, he passed from success to success, because he loved his art, and because he never tired of being a student. He did more than command success; he deserved it. Brought up abroad from early years, trained in Italy, in France, and under the watchful eye of Steinle, who still kept alight the dying embers of the fire which Cornelius and Overbeck had kindled, there was something cosmopolitan, something also distinctively German, and, as a French critic has recently said, a large seasoning of a method purely English in his style; but above all it breathed the spirit of the Renaissance, and of that art which is enshrined for us in the Elgin Marbles. But it belonged to no school; relatively little affected by what had gone before, still less affecting what followed after, it stands almost by itself in contemporary art,

never mean or indeed other than gracious, rising at moments, as in the "Daphnephoria," to decorative inspiration, at all times cultured and polished, the ideal work of an ideal President of the Royal Academy.

But the Diploma Gallery with its "Athlete," together with the recollection of the more recent and very different "Sluggard," reminds us that we are dealing with a man to whom nothing came amiss; as the Renaissance sculptor modelled his statue on the little wax figure, so Lord Leighton, making yoke-fellows of the arts, would build up his glowing canvas from a tiny sketch in the round. He was in no sense a painter dallying with another art; he was a veritable man of the Renaissance, painter and sculptor at once, recalled to life, like the hero of "l'homme à l'oreille cassée," to find the earth peopled with a punier race. Nor does the likeness end here, for the artist, like his prototype, was the consummate man of the world, full of tact and bonhomie, sought after and appreciated wherever wit and culture are held in esteem: and all this had its bearing on the position of art at large. It would be an absurdity to deny that, within the memory of middle-aged men, art has socially climbed higher up the ladder, and I think, as we have no Michael Angelo Titmarsh to make his thong sing round our shoulders, we need not pretend to regard this as a subject of regret. Whatever our feelings on this point may be, however, the man who made first a baronetcy and then a peerage the almost inevitable complement of his career was responsible, more than any other individual, for the altered state of things; and we may say this with the more freedom because it was for the welfare of art, and for the good of the body of which he was the chief, that he worked, and not for the satisfaction of a personal ambition.

That he regarded the honours showered on him as a tribute to English Art as well as to himself we should have been quick to guess, but we have it in his own words; and these honours were no less marked abroad than at home. He had, for instance, the rare distinction of the Prussian "Ordre pour le mérite." At every Court our English Ambassador of the Fine Arts was a welcome guest. An accomplished linguist, he spoke four European languages with ease and distinction. Thirty years ago a sceptical Teuton was fain to confess not only that the young Englishman's German was, as he put it, "pure as a bird," but that the particular corner of the Fatherland from which he himself hailed had been divined at once, and the German Emperor has been the last to vouch for its truly native quality; in Italian, the tuneful tongue of his second home, he was an adept even to conversance with two or three dialects; in French, the master of full and facile speech. His English, ornate, but poetical and expressive withal, is known to most

of us. Endowed with a personal beauty to which no one could be indifferent, an entire stranger to the formality of manner and preoccupation of interest which makes the Briton so well hated and so fatally misunderstood, he met the German, the Frenchman, the Italian on his own ground; and did something, we must believe, to show that we have other qualities, both as men and as artists, than the self-engrossment and insularity with which we are credited.

To the winning manner, to the frank and sympathetic receptiveness, we are all indebted as a people for what it has brought us; to the sincerity, to the kindness of heart and zeal in doing good, of which that manner was the index, life-long friends can testify; and a chorus of assent would rise from those less known to him whom he had gone out of his way to serve. If he was Art's High Priest, he was also the Good Samaritan to those of her votaries—how many, alas!—for whom the battle of life has proved too hard.

In the Academy itself a man so gifted, so ready to take everything on his own shoulders in a spirit of natural confidence, might have become an unconscious autocrat; the very qualities which did so much for the society in the eyes of the world might have done something to impair its real vitality. But, full of impulse as he was, he was ever reason's humble servant; ambitious for the welfare of his art, he recognised the surest road to such an end in an unwavering loyalty to his colleagues; fitted by his natural capacities for a benevolent despotism, he was by conviction a truly constitutional ruler.

What the Royal Academy has lost in him none but the members themselves can say, and perhaps the full knowledge has not come even to them as yet; but the sum of his qualities lies before us like an open book—qualities of head balanced by those of heart, a rare union of the power and the will to do good. Where the intellectual interests lay, whither the heart had gone out, is not that a riddle easy to solve? He gave us the answer himself in those words, almost his latest, so pathetic in their simplicity and comprehensiveness: "Give my love to the Academy"—a message which forms perhaps the noblest epitaph a President could have.

ARTHUR EDMUND STREET.

## CHRONICLE.

### The late Lord Leighton and the Institute.

The death, on the 25th ult., of the great President of the Royal Academy of Arts, and the semi-state with which his body was conveyed to its resting-place on the 3rd inst., formed the first subject submitted that same evening to the General Meeting of the Institute. The President, who fills the post vacated by Sir Christopher Wren—that of Surveyor to the Fabric of St. Paul's—spoke



of the worthy tomb found for Leighton close to that of the great English architect; and proposed that the Institute should offer to the near relatives of the late Lord Leighton an expression of sincere condolence with them in the loss they had sustained by his death, and that a like expression of sorrowful regret should be conveyed, in the name of the Institute, to the Council of the Royal Academy of Arts. The proposal, it need hardly be said, received the warm adhesion of members; and both Mr. Woodward [*A.*] and Mr. Stannus [*F.*] spoke on the subject.

At the funeral, besides the President, Mr. Penrose, F.R.S., who acted in his official capacity, and his immediate predecessor in the Chair, Mr. Macvicar Anderson, the four Vice-Presidents, Messrs. James Brooks, Ernest George, Alex. Graham, and Aston Webb, with the Honorary Secretary, Mr. Emerson, represented the Institute, occupying seats in the cathedral to which they were invited by the Council of the Academy.

Frederic Leighton, R.A., was one of the seventy-five more or less distinguished men whose names appear in the first list of Hon. Associates, the useful and valuable class of members formed in 1877; and in February 1895, as Sir Frederic, he was recommended to the Council for nomination as Honorary Fellow, his election having been deferred in consequence of his sudden departure for the East. In the meantime he had received the Royal Gold Medal for Architecture, the only painter who since the establishment of the Medal, forty-seven years before, had obtained that distinction. But it did not require so emphatic a recognition of Leighton's universal power in Art as the bestowal of the Queen's gift to prove his versatility. Before he was nominated the then President, Mr. Macvicar Anderson, to whom the nomination was mainly due, said in his Address to Students, 1894: "To refer to Sir Frederic 'Leighton's works as a painter would be superfluous; his claim to be a sculptor of no mean order is indisputable; and as if this were not sufficient, the subject of his more recent 'Addresses to the students of the Royal Academy' has led him, as it were inadvertently, to demonstrate that in regard to the art of 'architecture he possesses an intelligent and a critical grasp of the subject second to no modern author.'" These were no empty, certainly no meaningless, compliments. Mr. Penrose, who filled the Presidential Chair when the Medal was presented, went even further, for he said that Leighton was the only President of the Royal Academy, from the time of its foundation, of whom it could be said with certainty that he evinced a thorough knowledge of the great Arts. And the mathematician betrayed himself when Mr. Penrose added:

The greatest master in Art since the days of Pericles is reported to have said, "I know but of one Art." There

have been but few who could justly adopt those words, but one of those few is Sir Frederic Leighton. Similar to its tripartite analogy in Nature, where length, breadth, and thickness form one space, so architecture, sculpture, and painting are one in Art; the practice is different, but the principles, whenever excellence is touched, are found to be the same in each branch. You know Sir Frederic Leighton's high achievement in sculpture. In architecture there is the clearest evidence of what I have called his potential merit had he had occasion to practise in our special branch.

On the 6th ult., at the first meeting of the Council of the Institute after the New Year Honours had been announced, they gave expression to the unqualified satisfaction with which they had learnt that Her Majesty the Queen had been pleased to confer on Leighton a peerage of the United Kingdom. Offering their hearty congratulations on the auspicious event, the letter which, on the 10th ult., conveyed the terms of the Resolution to Lord Leighton stated a personal conviction of the writers that in this matter the Council represented the unanimous sentiments of the Corporate Body. The reply contained the assurance that the peerage he had received was an honour in which he regarded all his brethren in Art to be in their degree sharers. An excellent portrait of Leighton, about which he personally interested himself, forms the frontispiece of the first volume of the third series of the JOURNAL of the Institute, completed in 1894.

Not the least touching incidents of the loss sustained by the Royal Academy of Arts and the Institute will be found in letters, addressed to Professor Aitchison, A.R.A., from two Hon. Corr. Members of the latter body, M.M. Charles Lucas and Paul Sédille. "*Je ne veux pas laisser 'passer la si douloureuse mort de Lord Leighton' . . . sans vous prier personnellement de dire à 'notre Institut royal des Architectes britanniques' combien je partage la profonde émotion qui doit 'lui causer, à lui et à toute la Société anglaise, la 'perte de ce si remarquable artiste, qui faisait 'songer par l'ampleur de ses facultés aux grands 'maîtres de la Renaissance.'*" M. Paul Sédille, who, with Leighton, and also R. M. Hunt, was present at the Institute when M. Garnier received the Royal Gold Medal, and who afterwards met the distinguished President of the Royal Academy at Professor Aitchison's house, writes:—"Lord Leighton était non seulement un grand artiste, 'qui faisait honneur à l'Angleterre, c'était aussi 'l'homme le plus séduisant à tous égards qu'on 'pût voir."

Monsieur Charles Garnier [*Hon. Corr. Member*],  
*Royal Gold Medallist 1886.*

The architects of France are showing their appreciation of the exceptional honour recently conferred on the architect of the Opera House of Paris, one of the monuments of the century which represent progress in architectural design, and the most typical creation of the Style Napoléon III., whose reign must, in due course, be

historically recognised as a great one. A banquet is to be offered to Monsieur Garnier on the 7th prox. in Paris, and another at Nice on the same day and at the same hour. The festivities are to be further enlivened by a ball, to take place at the Salle des Champs-Élysées, 57 Rue de Ponthieu, Paris, also on the 7th prox., the proceeds of which are to be given to the Caisse de Secours Confraternels. Many societies of architects in various parts of France have expressed a wish to be associated with their *confrères* of Paris in doing honour to M. Garnier, and they echo the communication made to him by the Council of the Société Centrale, as follows:

Paris, le 15 janvier 1896.

TRÈS CHER ET TRÈS HONORÉ PRÉSIDENT,—Le Bureau de notre Société vous a, dès la première heure, exprimé la joie que lui avait fait éprouver votre promotion à la dignité de Grand Officier de la Légion d'Honneur, et vous a transmis ses chaleureuses félicitations.

Le Conseil a voulu s'associer à cette manifestation; il vient de décider à l'unanimité qu'il devait, par une lettre en quelque sorte officielle, vous dire à son tour combien nous sommes heureux et fiers d'un événement si important dans les fastes de notre corporation.

Nous voulons célébrer cet événement, unique jusqu'ici dans l'architecture, en un banquet confraternel qui aurait lieu le 7 mars prochain. Nos confrères se font déjà une fête de vous y présenter leurs compliments et de vous y remettre, au nom de la Société centrale, les insignes de votre nouvelle dignité.

Nous vous prions en conséquence, très cher et très honoré Président, de vouloir bien accepter la présente invitation et d'agréer, avec nos remerciements, l'assurance de notre profonde affection.

Two days prior to the date of the above, another letter was addressed to M. Garnier, as President of the Société Centrale des Architectes Français, Member of the Institut de France:

London, 13th January 1896.

DEAR MR. PRESIDENT,—The Council of the Royal Institute of British Architects have been informed of the additional honour recently conferred on you by the Government of the Republic.

It has given them unqualified satisfaction to learn that you have received the distinction of Grand Officier de la Légion d'Honneur, and they desire us to offer you their hearty felicitations on your merited promotion in the National Order of France.

With an expression of our personal congratulations we remain, dear Mr. President, most sincerely yours, William Emerson, *Hon. Secretary*; William H. White, *Secretary*.

The late Richard Morris Hunt [*Hon. Corr. Member*],  
*Royal Gold Medallist*, 1893.

Mr. Barr Ferree [*Hon. Corr. M.*], of New York, has presented to the Library one of fifty copies printed for private distribution of an article on "Richard Morris Hunt: his art and work." Originally published in *Architecture and Building* (7th December 1895), it is a remarkable tribute to the memory of one who, perhaps more than any other American, exercised a powerful influence for good upon the architecture of his country, at a time when it was absolutely wanted—when,

in fact, the educational movement of which Professor Ware had been the pioneer was beginning to bear fruit. The portrait of Hunt which adorns the first page is a "process" reproduction such as can only be obtained in the United States and from an American printing-press; and the other illustrations represent some of his later and better works. A Paper read on Tuesday, 4th inst., before the Manchester Society, by Mr. J. B. Gass [*F.*], which treats of both Hunt and Richardson, as well as of American architecture generally, is printed at page 229. As the Godwin Bursar of 1885, Mr. Gass travelled in the United States, and there had the advantage of visiting Hunt in New York and Richardson in Boston.

#### The Prize Drawings at Allied Centres.

A selection of drawings from among those which gained the Studentships, Medals, and other Prizes of the Institute for the current year, consisting of twenty-one strainers, will be exhibited at Birmingham from the 10th to the 22nd inst., under the charge of the Allied Society there. They are accompanied by specimens (nineteen sheets) of the "Testimonies of Study" submitted by Probationers for admission to the Intermediate Examination. The following is a list of the authors and of the selected works:—

##### ROYAL INSTITUTE SILVER MEDAL (Drawings).

Mr. H. P. G. Maule (The Medal): Hampton Court Palace, Elevation of River Front and Plan of First Floor (2 strainers).

Mr. C. W. Smith (Medal of Merit & £5. 5s.): Gedney Church, Elevations and Sections (2 strainers).

##### SOANE MEDALLION (Design for an Institute of Architects).

Mr. R. Shekleton Balfour: Perspective, Details, and Plans (3 strainers).

Mr. John Anderson (Medal of Merit): Perspective, Details, and Plans (3 strainers).

Mr. E. A. Rickards (Honourable Mention): Perspective, Details, and Plan (3 strainers).

##### PUGIN STUDENTSHIP.

Mr. C. C. Brewer: Elevation and Details of Bishop Gower's Screen (1 strainer).

##### OWEN JONES STUDENTSHIP.

Mr. H. C. Corlette: Sant' Anastasia, Verona (2 strainers).

##### TITE PRIZE (Design for a Stone Bridge).

Mr. H. A. Crouch: Perspective, Details, and Sections (3 strainers).

##### GRISSELL PRIZE (Design for a Band Stand).

Mr. J. H. Tonge: Plan, and Details of Construction (2 strainers).

##### INTERMEDIATE EXAMINATION: TESTIMONIES OF STUDY.

Mr. F. M. Harvey, sheets Nos. 1 to 11 inclusive.

Mr. S. Chesney, sheets Nos. 1, 2, 3, 7, 8, 9, 10, and 11.

#### The late John Thomas Newman [*F.*].

The following particulars of the professional career of the late Mr. Newman, who had been a Fellow of the Institute since 1886, have been kindly supplied by his junior partner, Mr. William Jacques [*A.*]:—John Thomas Newman, who died



on the 29th ult., aged 65 years, was during his earlier years employed by Messrs. Peto, Brassey, and Betts as a surveyor and valuer during the construction of the Victoria Docks, and in that capacity obtained an intimate knowledge of materials and building operations. On leaving that firm at the conclusion of the Victoria Docks contract, he commenced business as an architect and surveyor, and for several years was busily engaged in the development of building estates and the erection of private houses and business premises in the vicinity of the metropolis. After the passing of the Elementary Education Act 1870, the West Ham School Board appointed him their architect, and some three years subsequently he was also appointed architect to the Leyton School Board, both of which appointments he held to the date of his death; and for these two Boards he designed and superintended the erection of some fifty schools. About 1883 he was appointed surveyor to the Estates Sub-Committee of the London Hospital, in which capacity he carried out a large amount of work. For many years he acted as surveyor to the Council of the Bishop of St. Albans' Fund. In addition to work in connection with these appointments he, in conjunction with his partner, carried on an extensive general practice, his executed works including churches, schools, and other buildings in various parts of the country.

#### Additions to the Library.

*Masterpieces of Greek Sculpture: a Series of Essays on the History of Art*, by Adolf Furtwängler, and edited by Eugénie Sellers, with nineteen full-page plates and two hundred illustrations in the text [London: William Heinemann], has been presented by the Publisher. Mr. Heinemann, as one of our most enterprising publishers, deserves the thanks of all for the publication of this handsome volume, which will be dealt with at length in a subsequent issue of the JOURNAL.

*Old Chester*, etched and described by H. Crickmore [London: J. M. Dent & Co.], a monograph which both in matter of letterpress and illustration is worthy of its subject, has been presented by the Publishers.

*The Sculptures in the Lady Chapel at Ely, illustrated in fifty-five Collotype Plates, with Descriptions*, by Dr. Montague R. James, and a preface by the Bishop of Ely [Hon. A.], has been presented by the author and the publisher [London: David Nutt].

*The Law of Compensations*, by J. H. Balfour Browne, Q.C., and Charles E. Allan, has been received from the Publishers [London: Shaw & Sons and Butterworth & Co.]. The cases cited are brought down to July of last year.

The Publishers [London: Crosby Lockwood & Son] have presented *Lockwood's Builder's. Con-*

*tractor's and Engineer's Price Book for 1896*, edited by Francis T. W. Miller [A.]. The full text of the new London Building Act 1894, with annotations and explanations by Mr. A. J. David, LL.M., of the Inner Temple, is given in a Supplement, together with unrepealed sections of former Acts, and the By-laws and Regulations now in force under the London County Council. The Regulations as to procedure and fees of the Tribunal of Appeal are also added.

Herr Karl von Donat has presented a pamphlet entitled *The Pontine Marshes*, being a lecture delivered before the Geographical Society of Berlin by Major F. M. von Donat. A map of the Pontine Marshes serves as a frontispiece to the pamphlet. Mr. J. Tavenor Perry [A.] has presented *Notices Historiques et Artistiques de la Chapelle Minutolo*, by Michel Ruffo, being the third edition of a pamphlet published at Naples [Typographie de Gajetane Fusco, 1891].

The first issue of the *Annual of the British School at Athens*, Session 1894-95, has been received from Messrs. J. S. Virtue & Co. The volume contains three plates, and a frontispiece from a drawing executed in 1886 by Mr. Penrose.

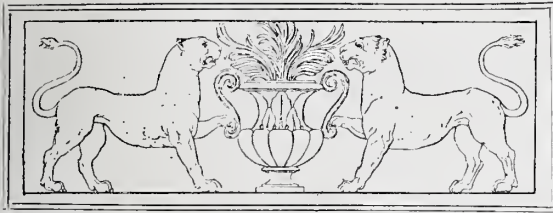
The Society for the Promotion of Hellenic Studies has presented a *Report on the Prospects of Research in Alexandria*, containing a map as well as illustrations in the text, by D. G. Hogarth and E. F. Benson (reprinted from the Archaeological Report of the Egyptian Exploration Fund, 1894-95); and the *Journal of Hellenic Studies* (vol. xv. part 11), the latter containing a note by Mr. Penrose "On some Traces connected with "the original Entrance of the Acropolis of "Athens," illustrated by three plates.

Mr. G. St. Pierre Harris [A.] has forwarded a lithographed form of specification, which he has published through Mr. Batsford, from whom it may be procured for 6s., post free.

It may be noted that Mr. Barr Ferree [Hon. Corr. M.] contributes an interesting article, amply illustrated, to *The Engineering Magazine* for January on "The Value of Good Architecture "in Cities," comparing therein American and European tastes.

#### Suggestions in Design.

Mr. John Cotton [F.], *Pugin Travelling Student* 1869, is about to publish a volume of sketches called "Suggestions in Architectural Design." The book contains a number of plates, and condemns, as an obstacle to progress, the present over-nice adherence to archæological precedent, offering suggestive examples of a free use and combination of architectural forms. The author pleads for more freedom, and defends his views in a paper called "Thoughts on Architectural "Progress," which will form a preface to the work.



## THE ADMINISTRATION OF ART IN FRANCE. II.\*

By ANTONIN BARTHÉLEMY, Delegate of the  
Ministère des Beaux-Arts, Paris.

The Academy of France at Rome is for the students of the Paris School of Fine Arts the goal of their most cherished ambition. There is a game which I recommend for the long winter evenings, the more so that it combines pleasure with instruction, and is not, like whist, confined to a limited number of persons. The players are divided into two camps: one camp contains all the celebrated artists who never tried to enter the Academy of France at Rome, or failed to be admitted, and holds that the Academy is no good; the other camp contains the artists who have achieved success, and whose names are written on the walls of the Villa Medici, and contends that the Academy is an excellent institution. The game has long been in favour on the other side of the Channel, and I do not know but that it is still played whenever the Academy of France at Rome is discussed.

I am not, for my part, prepared to question the usefulness of the Academy of France at Rome. It is a political instrument with which France could ill dispense; and it does a very great service by affording a unique shelter to artists at a time of their lives when they are susceptible of deriving a permanent benefit from the contemplation of some of the most beautiful among the works of God and man.

The Academy of France at Rome dates from 1666, and has always been—save from 1863 to 1871—under the control of the Academy of Fine Arts, the only one of the five sections of the Institut de France which fulfils an official function. The Revolution of 1789, of which I shall have occasion to speak again, and which has too often been grossly misrepresented as having right and left destroyed the monuments of art, not only maintained the Academy of France at Rome, but, in accordance with David's proposal, raised the allowances of the students. After a preliminary trial which eliminates a number of the candidates for the *Prix de Rome*, those who have been selected enter *loges*, where they have separately to work upon a subject set by the Academy of Fine Arts. The com-

petition extends over seventy-two days for the painters and sculptors, one hundred and ten days for the architects, and ninety days for the engravers. The awards are made by the Academy of Fine Arts after the works have been publicly exhibited. The successful candidates, one for each art, leave for Rome, where they remain—the painters, sculptors, and architects for four years, the engravers for three years only. If a student marries, he forthwith has to leave the Academy.

During their sojourn at Rome the students are expected to send to the Academy of Fine Arts works the subjects of which must be primarily submitted to the Director of the Villa Medici, who is always an artist of renown, a former pupil himself of the school over which he presides. A report on those works is every year presented to the Academy of Fine Arts, and printed in the Official Journal of the French Republic.

I do not wish to go into details, because if I did I should write a book; and that book has already been excellently written by a gentleman whose name I am not allowed to mention, he happening to be the Secretary of the Royal Institute of British Architects. But I am glad to say that in the last few years, thanks to the foresight and liberal spirit of the men who have been responsible for the administration of art in France, the programme of the Academy of France at Rome has been most usefully enlarged. It is not enough to travel and sojourn in countries where, together with great libraries and museums, one can find in a beautiful state of preservation the monuments of former civilisations; one must also go to those countries where the aspects of Nature, the exterior and surroundings of those who inhabit them, are likely to develop inclinations still ignorant of themselves. It is not only Rome and Italy, it is also Athens, Cairo, and in a general way all places where the French legations can offer artists a shelter and a help, which must attract those who, in an age of keen competition, when so much importance is attached to diplomas, rightly fight for the rewards which the State has the power to bestow. Young Frenchmen should be encouraged to study French architecture, and to look for their inspiration in the monuments of their national art. It is in such a study that French architecture will find a new life, which it wants.

Indeed, I believe that all artists should devote a part of their time to the study of architecture. It has well been pointed out that Lord Leighton, whose death means a great loss not only to this country but to art in general, for happily art knows no frontiers, had followed such a course; and that architecture had never been considered by him as of secondary importance. It is an all-important study at a time when we witness a revival of decorative art, and when, as I said in my first article, we feel the necessity of bringing, as in the days of old, all artists into that close contact and

\* The first contribution on this subject appeared at p. 186.



harmony which alone can give us monuments worthy of our high civilisation.

The State has in education a great responsibility. It has no right to foster mediocrity with the money which taxpayers intrust to its care; and one cannot help gathering from the annual reports of the Academy of Fine Arts the impression that mediocrity is too often the lot of those who are allowed to pass the best years of their time in the Villa Medicis. The only remedy will here, as in many other cases, be found in a greater amount of liberty, in the multiplication of those centres of which the Eternal City is only one, in a large introduction of fresh air where the atmosphere has been made rather close by constant confinement, to the exclusion of everything but ancient history and mythology.

The State has in France another duty to perform in regard to the teaching of art, and here we are again brought face to face with that great question of technical instruction which I treated in my first article. Every one has heard of the French national manufactures—I mean Sèvres, the Gobelins, and Beauvais. They are most useful in bringing out those fine vases and those grand tapestries which are given to foreign potentates or illustrious statesmen. Sèvres manufactures also a humbler class of wares which are presented to the winners in the innumerable shooting and athletic competitions in which the deputies and senators interest themselves all over the country. It is plainly evident that the State would not be justified in trying to compete with industry in the production of china or tapestry, but that its duty is to set an example, and, by supporting efficient schools of ceramic and tapestry, to raise the standard of those industries. It must also open, in its Workshops, museums where the best products in those arts may be studied, and laboratories free to all who can justify that they are engaged upon useful scientific or artistic researches. It must, lastly, endeavour to solve one of the great problems of technical education by forming artisans enabled to combine the highest skill with a complete knowledge of all the details of their work. If the national manufactures did not exist, it would be a mistake to establish them; but we have them, and we must make the best of them. The State has fully recognised the importance of the programme which I have outlined; and, in making the national manufactures a part of the bureau of education of his department, the present able Director of Fine Arts has plainly shown that he thoroughly understood his mission.

I now come to a most important institution, that is, the Conservatoire of Music and Declamation. It is one of the legacies of the Revolution of 1789. Prior to that date the teaching of music was principally given in religious establishments, and an expert estimated at about ten millions of francs the sums annually expended in choir-schools.

As for theatres, they recruited the artists in their own classes or in private institutions. To-day the Opera still holds classes in dancing, and so justifies its official title of National Academy of Music and the Dance. In 1784 Glück advised de Breteuil, who was then Secretary of State, to establish a school of singing and declamation on the site where the Theatre of the Porte Saint-Martin was since erected. Gossec was the director of that school. He was Music made man. It is said that one day—he was then over ninety years old—he fainted in the street; people rushed to his assistance, and when he had come to and was asked where he desired to be taken, he answered, "To the Opera Comique." He was one of the most devoted and faithful friends of Sarrette, who, assisted by the best among the Revolutionists, founded the Conservatoire of Music and Declamation, of which he was the first director, being succeeded by such men as Cherubini, Auber, and Ambroise Thomas.

In that institution, which contains also a military school of music, the State provides for the teaching of every possible instrument, as well as for that of harmony, fugue, counterpoint, and composition. Every year the most distinguished pupil in that last branch of study is, after a process of selection similar to the one in use for painters, sculptors, and architects, sent to the Academy of France at Rome, where he spends two years: another year is devoted to a tour in Germany and Austria, whence he has, like his colleagues, to submit works to the Academy of Fine Arts. He is entitled to have a short opera or a ballet performed at the Grand Opera in Paris, but he must take his turn, and his hair is often grey when his turn comes. The Conservatoire is also intrusted with the teaching of declamation, and those theatres which the State subsidises are allowed to select before all others from the Conservatoire the young actors and singers who gain prizes at the annual competitions.

The State in France gives every year to certain theatres—four in number—grants to the extent of about 1,600,000 francs. There is much to be said for and against those grants. It is a question which I should not be justified in treating at any length in these columns. It would lead me, for instance, to speak of such important details as the censorship of plays. I shall come at once to another part of my subject, which is the State in France as a curator.

The museums—I mean all museums—are of comparatively recent date. Before there were private collections. Kings, princes, wealthy men, ordered pictures or statues to decorate their palaces and homes. But there came a time when it was found necessary to constitute public collections, so as to preserve masterpieces from the risks of war or evolution. In that department the French owe much to a revolution—that of 1789—which not

only opened in 1791 the first public exposition of works of art—followed in 1793 by a second exposition, containing over a thousand works, and in 1795 by a third exposition with no less than 3,048 works—but also established, at the Louvre, the Central Museum of Arts; with such provincial museums as those at Caen, Le Mans, and Toulouse. France now possesses four national museums, which are those of the Louvre, Luxembourg, Versailles, and Saint-Germain; and many more which do not come under that too limited designation. Indeed it may be truly said that there is not a town in France, be it ever so small, which does not boast of a museum.

It is to be regretted that the link between the provincial museums and the State is not stronger, for the State sends every year to the different museums works which it purchases at the various expositions. Quite recently, and thanks to the energy and skill of the present Director of Fine Arts, Parliament has passed a bill giving the national museums power to receive legacies, to dispose of the sums bequeathed to them, and to acquire works of art within the limits of their resources. They also receive every year from the State, as do most of the other museums, grants which enable them to compete with other nations in the bids, often so keen, for the possession of important works of art.

It is surely unnecessary for me to speak here at any length of museums which are as well known on this side the Channel as they are in France. What I would like to impress again upon the minds of my readers is this, that no museum, be it ever so rich, is of the slightest value if it is not organised for education, if it is not so classified that one may come out of it with more knowledge, and not with the tired feeling that one so often experiences. I believe that it is possible and easy to give museums their full educational value by constituting what we call in French *des ensembles*—I mean by bringing into harmonious contact all that contributes to the outside and inside decoration of our homes and buildings. I do believe that museums, with few exceptions, have as yet failed to fulfil their mission. They are, most of them, made of long rows of pictures, long lines of statuary, overcrowded cases which tire the eyes and prevent the mind from synthetising, and so deriving permanent benefit.

We have in France tried to put the French artists in the right way again by constituting two museums, which every student ought, as a matter of duty, to go and visit—I mean the Museum of Comparative Sculpture in the Trocadéro, and the Museum of Decorative Art in the Palais de l'Industrie, the first devoted to the exterior decoration of the building, and the second to the interior decoration. The Trocadéro Museum is, from an educational point of view, one of the greatest achievements of the present Government in France. Its

origin may be found in the museum of French monuments which the men of the Revolution constituted in 1795. In seven large rooms Alexandre Lenoir disposed, in chronological order, about 500 statues or busts, besides a few fragments of two of our most important buildings. Alexandre Lenoir believed in the superiority of French art. His ambition was to show that, as early as the thirteenth century, we had had architects and sculptors who could easily compete with the best Italian masters. His object was to cause a reaction against the excessive admiration for Greek and Latin art which has handicapped so many artists. That museum was, through the exertions of Viollet-Le-Duc and the Historical Monuments Committee, revived; and I do not know, for the architect and the artist generally, a more useful study than that of the immortal works which it now contains.

I have just spoken of the Commission des Monuments Historiques. It constitutes one of the most important agents by which the State discharges its duty as a curator of art. Founded in 1837, the Committee have slowly but steadily made their way, thanks to the energy and talent of such men as Mérimée, Vitet, Lenormant, de Laborde, Lamartine, Labrousse, Vaudoyer, Questel, de Lasteyrie, Victor Hugo, Viollet-Le-Duc, Beulé, Quicherat, Abadie, Ruprich-Robert, MM. Boeswilwald and Antonin Proust, and many more whom I cannot possibly mention here. The Committee enjoy an almost complete independence, disposing as the members think fit of the money—more than a million francs—put every year in their hands by the State. It may be that their *restaurations* have not always been faultless. But they have done great service. They had from the first three objects in view: a classification of the monuments of France; the constitution of a museum of arts, reproducing the different specimens of French architecture and sculpture from the time when those arts had first conscience of themselves; and the passing of a bill empowering the Government to oppose the destruction of a classified building, when such a destruction is contemplated by the owner, whether private individual or public body. The classification has been made, and is still carried on as far as the movable objects of art are concerned; the Trocadéro Museum has been established; and since 1887 France has had a law protecting her historical buildings, such as Sweden, Norway, and Denmark possessed long ago, Italy in 1872, and other countries at different times.

It is for all lovers of art a matter of deep concern that such a law does not exist in England. It is a waste of energy and money to oppose successively, and as they present themselves, the pulling down of the Trinity Almshouses or the destruction of the Church of St. Mary Woolnoth. What is wanted is a law, and it is to be hoped that



Parliament will give it us. I say *us*, for the destruction of an artistic building is a loss not only to the country in which it takes place, but to all those who are interested in art, to whatever country they may belong.

## NOTES, QUERIES, AND REPLIES.

### THE LONDON BUILDING ACT 1894.

#### Public Buildings—Thickness of Walls.

A question of considerable importance to architects and those engaged in the administration of the London Building Act was involved in the recent appeal of *The Metropolitan Asylums Board v. Tanner*, heard by the Tribunal of Appeal on the 18th December last. The Metropolitan Asylums Board were engaged in erecting a pavilion for infectious diseases at their South-Eastern Hospital, Deptford. The building was to be just over 30 feet high, with two storeys; the wards on each storey 120 feet long, and 26 feet wide, without cross walls; and the flooring of the first floor to be of steel joists and concrete. The long main walls were to be 14 inches thick, with eight vertical chases in one wall and ten in the other. Mr. Augustus Tanner, District Surveyor for Hatcham, declined to pass the walls as sufficient, and required those on the ground floor to be 18 inches thick. The Board appealed to the Tribunal of Appeal.

Mr. R. Cunningham Glen appeared for the appellants, and Mr. W. F. Craies for the District Surveyor. Evidence in support of the appeal was given by Mr. T. W. Aldwinckle, Mr. Arthur Harston, and Mr. Percy J. Smith; and *contra* by Mr. H. Cowell Boyes on behalf of the District Surveyor. It was admitted by the appellants that the chases in the walls lessened the strength; but it was urged that the sanitary turret and the smoke and ventilating flues, serving as buttresses, afforded additional supports. Further, that the concrete floor was an element of stability to the whole building.

Counsel for the appellants contended that there was no ground for including the building under Part II. of the first Schedule to the Act, dealing with buildings of the warehouse class, but that the Tribunal had power to deal with the case on its merits. The building would be of ample strength without increasing the thickness of the walls. The Brook Fever Hospital had been constructed on similar plans, and no objection taken by the surveyor of that district.

For the District Surveyor it was contended that the construction rules of the Schedule should not be regarded as absolutely binding on the surveyor or the builder, but as offering an accurate *résumé* of the scientific needs of construction as agreed by the different professional bodies represented before the Select Committee on the Bill. District surveyors, it was argued, were justified

in cases of public buildings of an ordinary mode of construction in taking the Schedule for warehouse buildings as the professional guide as to the minimum of stability. The building was rather over 30 feet high, and if they adopted the warehouse scale, the thickness of the walls should be 22 inches. If it were possible in practice to have an agreed thickness, it would be a guide and save enormous difficulty to district surveyors. The ordinary practice of architects was to allow 18 inches at least for the ground-floor walls of such a public building as that in question.

The Tribunal, without laying down any absolute rules, decided that the thickness of the east and west walls of the pavilion the subject of the appeal should, on the ground storey up to the level of the underside of the rolled steel joists to carry the first floor, be constructed of the thickness of 17½ inches; and ordered the appellants to pay the costs of the District Surveyor incurred by him in relation to the appeal, the costs to be taxed as between solicitor and client.

From this judgment it may be inferred that, in the absence of special peculiarities or merit in construction, the Tribunal will adopt for public buildings the rules as to walls applied by Parliament to buildings of the warehouse class.

#### Origin of the Ionic Volute [pp. 109, 163, 190].

From HORACE DOBELL, M.D., Parkstone, Dorset—

In studying the evolution of organic being, it is necessary to go back to the most primitive forms to find the root-ideas of their structures, and I take it that in architecture we must do the same. That is to say, we must go back to the dwellings, or nests, of primitive man, and seek for the root-ideas of architectural forms in the constructions made by man before the pure utilitarianism of the artificer was supplemented by the decoration of the artist. Let me suggest that if a thick slab of clay or of turf be rolled round at the two ends and then placed on a pillar; or if, as perhaps would be the more likely proceeding, the slab be placed on the pillar and then the two ends rolled up, you get a form of support which answers most of the purposes of a tree trunk and branches. Now, any one making these supports will soon find that the rolling of the turf or clay is much facilitated by thinning off the ends of the slab, and when these ends are rolled up the exact primitive form of an Ionic volute is obtained, the roll or coil getting thinner towards the centre, and a little mass or boss being formed in the centre of the roll. Dr. Ohnefalsch-Richter appears to me to begin his evolutionary process much too late to arrive at the root-idea—that is to say, he begins at a period when the rude, inartistic utilitarian artificer has already been supplemented by the artist, who has sought for some natural object to adapt to crude architectural form, and give it beauty without destroying the utilitarian idea.



## MINUTES. VII.

At the Seventh General Meeting (Ordinary) of the Session, held Monday, 3rd February 1896, at 8 p.m., Mr. F. C. Penrose, F.R.S., *President*, in the Chair, with 16 Fellows (including 10 members of the Council), 37 Associates, and 39 visitors, the Minutes of the Meeting held 20th January 1896 [p. 193] were taken as read and signed as correct.

Reference having been made by the President to the death of Lord Leighton, *Hon. Fellow, Royal Gold Medallist* 1894, and to the interment which had taken place that afternoon at St. Paul's Cathedral, it was

RESOLVED, that the Royal Institute of British Architects do offer to the near relatives of the late Lord Leighton an expression of sincere condolence with them in the loss they have sustained by his death; and that a like expression of sorrowful regret be conveyed, in the name of the Institute, to the Council of the Royal Academy of Arts.

The following candidates for membership, found to be eligible and qualified according to the Charter and By-laws, and admitted by them to candidature, were recommended for election, namely:—As FELLOW, Henry Philip Burke Downing [A.], F.S.I. (*Qualified as Associate* 1889). As ASSOCIATES, Hallam Carter Pegg (*Qualified* 1890); Osborn Cluse Hills (*Qualified* 1895); Ernest Reuben Orton Davis (*Probationer* 1890, *Student* 1892, *Qualified* 1895) (Leicester); Charles Matthew Ellison Hadfield (*Qualified* 1895) (Sheffield); John Robert Smith (*Qualified* 1895); Kenneth Wood (*Qualified* 1895) (South Shields); Edward Arthur Whigham (*Qualified* 1895) (Stockton-on-Tees); Henry Wheeler Anderson (*Qualified* 1895) (Adelaide, South Australia); Arthur Down (*Qualified* 1895) (Warrington); Lawton Robert Ford (*Qualified* 1895); George Churchus Lawrence (*Probationer* 1890, *Student* 1892, *Qualified* 1895) (Bristol); William Edward King Palmer (*Qualified* 1895); George Richardson Smith (*Qualified* 1895) (South Shields); Walter Henry Steadman (*Qualified* 1895) (Bristol); Tom Turner (*Qualified* 1895); Edward Thomas Allcock (*Probationer* 1889, *Student* 1891, *Qualified* 1895) (Loughborough); Edgar George Cusson Down (*Qualified* 1895) (Cardiff); Charles Burrows Flockton (*Qualified* 1895) (Sheffield); Arthur James Stratton (*Probationer* 1890, *Student* 1892, *Qualified* 1895) (Liverpool); Tom Williamson Hooley (*Probationer* 1892, *Student* 1893, *Qualified* 1895) (Manchester); Walter Brand (*Probationer* 1891, *Student* 1893, *Qualified* 1895) (Ipswich); Harrison Morton (*Qualified* 1895) (Taunton); John Douglas Bland (*Probationer* 1891, *Student* 1893, *Qualified* 1895) (Cambridge); Edmund Farley Cobb (*Probationer* 1889, *Student* 1890, *Qualified* 1895); Percy Rider Smith (*Probationer* 1890, *Student* 1891, *Qualified* 1895); John Lewis Redfern (*Qualified* 1895) (Hanley); Ernest Robert Danford (*Qualified* 1895) (Rotherham); Nicholas Fitzsimons (*Qualified* 1895) (Belfast); Victor Daniel Horsburgh (*Qualified* 1894); Cecil Scott Burgess (*Qualified* 1895) (Edinburgh); Everard Eastee Jordan (*Qualified* 1895); George Lewis Sheppard (*Probationer* 1893, *Student* 1894, *Qualified* 1895) (Worcester).

In the matter of the award of the Royal Gold Medal for the current year—the day of election being Monday, 2nd March 1896—By-law 64 was read; and the President announced that the Council proposed to submit to Her Majesty the Queen the name of Mr. Ernest George, *Vice-President*, for his executed works as an architect.

Papers on WOOD-CARVING AND WOOD-CARVERS, by Mr.

W. H. Romaine-Walker [A.], Mr. W. Aumonier, Mr. J. E. Knox, and Mr. W. S. Frith having been read, a vote of thanks to their authors and to the authorities of South Kensington Museum, and others who had kindly lent exhibits for the occasion, was passed by acclamation. Some practical demonstrations of wood-carving by Mr. Aumonier, Mr. Knox, and Mr. Frith closed the proceedings, and the Meeting separated at 10.40 p.m.

## PROCEEDINGS OF ALLIED SOCIETIES.

## THE MANCHESTER SOCIETY.

American Architecture and Architects, with special reference to the works of the late Richard Morris Hunt and Henry Hobson Richardson.

By John B. Gass [F.], Godwin Bursar 1885.

Read 4th February 1896.

Only of late years has the United States of America begun to emerge from the purely utilitarian spirit which characterised its early life. A struggle with the rude, coarse facts of life; a storing up of the products of labour—of wealth-forming; the currents of practical business; and a too great feeling of freedom and wealth-possession, caused an enormous outgrowth of unloosed individualities and rank self-assertion which survive to the present day. But the best of the native-born Americans, now freed from the struggle for existence, have imbued themselves with the wondrous stores of beauty of the best of the Western Age, and the world of the West fuses inseparably with that of the East.

In the early colonial days some good building was done, with simple aims and in a simple manner; but excepting this, America has no architectural past, no treasure-houses of beauty which are so much the part of our old-world life. It has no traditions to bind it, no archaeology to fetter it. It lives in the present, and for the future, giving the greatest possible significance to all that is being done to-day. The architecture of a country is a record of its life-history; the results are among the most permanent of its creations, conspicuous and long-lived. It is very much a matter of fashion. But how much fashion is representative of the life and habits and thoughts of the people! Fashion in dress very strongly marks this. As the developments or fashions of classic architecture and the various phases of our own beautiful mediæval work are representative of the mode of thought, the life, and the habits of the builders, so is the architecture of our own times. The sources of it are composite, like the sources of our composite English language, and it is equally fertile in expression. We live in an age of rapidity of change, too; but it is a great age. Never since the world began has life been so well worth living for the majority of the people as now, with all our defects and inconsistencies.

American architecture, in its early development, followed, to a great extent, our own country, with its Greek revival, its Gothic revival, and the Queen Anne period. But it is representative of the people:—The unrest of Broadway, New York; the unrelieved severity and bad drainage of much of old Philadelphia, and the staring vulgarity of its purse-proud municipal buildings; the spread-eagleism of the sky-scraping office buildings of Chicago particularly, with their bald outlines and evident desire of each to overshadow its neighbour and “lick creation”; the vulgarity and over-elaboration of the buildings of the earlier money lords of the realm; the cast-iron efforts of frontage, made in the cheapest and showiest manner possible, with bad ornament multiplied unnecessarily; the old painful attempts at Gothic, the newer works of the Revivalists, when Culture and Ruskin were becoming more the fashion; the late Queen Anne revival, with its quaint conceits and the opportunity for each man to build what seemed best in his own eyes; and the quiet, restful, and



scholarly, yet in many respects original, works of the best men in this its latest and best modern period, avoiding shams and eccentricities, giving evidences of the solid progress made in the development of the finer feelings and the higher civilisation of many of the people—now not merely the cosmopolitan people of the early part of the century, but a consolidated native American race, many of whom are better educated, have travelled, acquired broader views, and have higher aspirations, than at any previous time in the history of the country.

For this progress of expression, architecture—the oldest of the arts—has of late years obtained a truer recognition, though it is still considered to be more in the nature of a luxury for the rich, or only available for use in public buildings. As training is so indispensable to those who would practise it in a right manner, regular courses on architecture are given in the great centres of learning. Instead of the old-style architect, developed anyhow and with no proper training, there is in the United States now a body of highly educated and cultivated men, capable of sympathising with the best aspirations of the best clients, working with the enthusiasm which is so necessary to all the best artistic work, and erecting buildings well adapted to their purpose, and with beauty of thought in their design. There are, of course, many of the older school, giving their uneducated thought to the people, and many of the purely commercial school, with their low ideals, above which they never seem able to rise. These are not peculiar to America, but exist everywhere, and I am afraid will do so till the millennium arrives. Every architect, too, is greatly bound by the practical requirements of his building, and by the opportunities allowed by his clients. He too often has to express his client more than himself.

As we do not judge of the architecture of the Gothic period in England by the miserable dwellings and rude surroundings of many of the people, so we must not judge of the architecture of a country to-day by its worst, but by its best examples. And it is useless, too, to expect or look forward to the development of a new style; rather we must consider that the highest Art of to-day is in the adapting of the old but ever new and lovely forms to the requirements of modern civilisation.

It was my good fortune, some years ago, to be elected to the Godwin Bursary of the Royal Institute of British Architects, which, as you know, was instituted for the study of modern architecture in some foreign country. I elected to visit the United States, and armed with many introductions from the Institute, and an official letter to "all whom it may concern," I received from the leading American architects so much considerate kindness and help that the memory of the months I spent in that country will always be of the brightest possible description. It was the best time I ever had in my professional life. In what is now the East I met nearly all the leading men, including practically all the designers of the wonderful Chicago Exhibition buildings. The splendid illustrations of these buildings have made them familiar to all of us. Though built with temporary materials and for temporary purposes, they distinctly marked an architectural development of which any country may well be proud.

It was exciting and stimulating in the highest degree to meet those who are making the scenery of modern civilisation in a new country, and the background of its historical pictures—to know the men who are the leaders in a great onward march, and writing the history of the country in its best buildings.

I have had the honour of reading before the Institute a Paper on "Some American Methods of Construction,"\* and before the Sanitary Institute one on "American Sanitation," so will not touch on these matters. Nor shall I give you a

general critical essay on American architects or architecture, but will confine myself to a short account of the life-work of three of the men it was my privilege to know personally, and who, in my judgment, have had the greatest influence for good on the architecture of the country—Professor William R. Ware and the late R. M. Hunt and H. H. Richardson. Did time permit, I could speak with much pleasure about the many American architects I met, who are associated with much that is best and progressive in the architecture of the country; of men I interviewed and men who interviewed me; of one of the most enthusiastic disciples of Ruskin, who, forsaking the path he had marked out for himself in his early days, and in which he had done notable works, is now the head of a fireproofing company in Chicago, which bears his name (he is doing good work in that, and probably his revenue will be much greater than in the old High Art days); of the distinctly commercial architects who work their business on the most prosaic lines, issue catalogues of their works, and advertise in almanacs, directories, newspapers, and the like; of an architect who ran one office while his wife had another, and did a good business in domestic work; of the Canadian architects I met, whose work and surroundings are more distinctly English than American; of the Government Architect and Architectural Department at Washington, which changes with the party in power; of the architect, then in small practice, who recently came in with President Cleveland; of the building of a great State building, where even the masons and labourers were put in for political services. But more than all, I could tell with the greatest pleasure of the kindness which never seemed to tire; of all the many professional brothers it was my good fortune to meet, and of some of the men famous in Art, Literature, Music, and Science they helped me to know; and of some of the friendships formed, which have been increased by years, and which I value very greatly.

Columbia College, New York, is now one of the most important centres of architectural training, though it was only founded in 1882, and after that at the Institute of Technology at Boston. But the founder of the latter established the New York one, too, and in Professor William R. Ware, American architecture has had an enthusiastic organising leader whose influence has been, and is, far-reaching for good, and to whom the present generation of architects is greatly indebted. With a most attractive personality, gifted with the faculty of rousing enthusiasm, a learned scholar, with high thoughts and gentle ways, but practical withal, he has been the real founder of the present American schools of architecture. With a keen appreciation of the importance of the profession, a high ideal of what an architect should be, and recognising the architectural possibility of his great country, he saw the necessity of a systematic training in addition to the office education, and endeavoured to solve the question as to how this should be attained. He said: "It was practically a new question, for architectural education in France and Germany, like university education in those countries, is so much under Government influence, and architects, like the graduates of universities, are so largely dependent upon Government patronage for success, that few practical lessons could be drawn by us from their schools—the conditions are too diverse. In England we might have expected to find more congenial models, but for reasons easily understood the English architects looked more to us for examples than we to them. We had, then, not only to run our factory, but to invent our machinery. We had to lay out our subjects for ourselves, write our own text-books, or go without and learn by the successes and mistakes of each year what to do and what not to do in the next, making progress slow but safe. He believed that they were bound to turn out liberally educated men, and next to

"going to college he believed that studying architecture is the most generous discipline a young man can find."

In discussing architectural education in England, the courses adopted in the American schools have been fully referred to, so I shall not go over them now. A very comprehensive system has been developed and greatly taken advantage of, but the men so trained have not yet had their full opportunities.

One of my delightful memories is of a number of young architects, all of whom, I believe, had studied under Professor Ware, who established themselves in the same building, and helped and stimulated each other in their work. All men of college education, of culture, and with the wider outlook that foreign travel gives, they showed to advantage the benefits of a thorough training. Each working to establish a practice—which is just as difficult a thing in America as in England—they were mutually very helpful. Architects generally are not drawn together over their work; they rarely discuss it with one another, and, though united in the Societies, are usually isolated in practice. I suppose this is inevitable under present conditions. As the years have gone these men have probably drifted apart. I know they are making good use of their opportunities now, and the time they spent together must always be a pleasant recollection. It was a good thing to meet them and feel what a bond of sympathy and kindly fellowship was given to them by the love of our art and their enthusiasm for it. I could tell you of many conversations, of their methods, their aims and their outlook. One of method may be of interest. Several, travelling in Europe, had met some of my fellow students at the Royal Academy. The latter were spending all their time making careful and elaborate drawings of parts of the buildings, laboriously sketching detail and measuring up. The Americans, on the other hand, were endeavouring to "absorb" the building, trying to get at the ways in which the Gothic architects worked, not sketching isolated or pretty bits, but going for the whole thing, studying it carefully, getting the whole impression, sketching little, but buying photographs to which they could refer for details. I quite feel that too much can be made of drawing detail and making pretty pictures, and too little of the education that absorption of the whole building gives. Archæology enters into the life-work of the architects of a new country much less than into that of the men of an old country, and therefore is less studied and has less influence.

No one can study the progress of architecture in America without being impressed with the influence the training in the French schools has had on much of the work of to-day. Of the men who have studied in France, the late R. M. Hunt was the most notable. Beginning his architectural studies in Geneva, and afterwards at the Beaux-Arts, he was an enthusiastic disciple of the French School, and exercised great influence therefrom. Opening an atelier for architectural students in New York, on the French system, at a time when there was no recognised architectural teaching, many of the older men of note to-day worked with him. But he was a thorough-going American in every way, with the recognised characteristics of appearance, in the usual hurry, and with a quick, nervous manner, and kindly and courteous. He assisted me in many ways, and gave me many photographs of his works. Particularly did he seem to enjoy handing me the large photograph of the Yorktown Monument he had designed to commemorate the surrender of Lord Cornwallis and the British forces to George Washington, and emphasised the event with great good-humour.

Being a man of wealth, with friends among the rich, he had opportunities which suited his somewhat romantic disposition, and expresses itself in the rich transitional architecture of France, in which style his best work was done. In the W. K. Vanderbilt House, New York, his most notable work, not only has he caught the spirit of the

richness of the time when the late French Gothic and the Early Renaissance blended together, but he showed great skill in adapting it to modern requirements. Of a soft grey limestone, which, though cold in colour, is well adapted to the style of architecture and the picturesqueness of outline, the delicacy of detail and richness of the carving in no way detract from the general solidity of the building, but emphasise it.

In the Marquand House a quiet and not impressive exterior encloses an interior elaborated to its utmost, with a large Renaissance hall, a severely classic salon, with Alma-Tadema-designed furniture, and a ceiling painted by Sir Frederic Leighton; an elaborate Moresque ante-room; a Japanese drawing-room and an Elizabethan dining-room; with an equally diversified series of bed- and sitting-rooms.

The Lenox Library was one of his earlier works, and designed at a time when American architecture was not characterised by any refinement, but rather by vulgar display and cast-iron ornamentation. It is a simple, dignified building, and shows in a marked manner the result of French Academic training.

His work is, however, very unequal: sometimes very good indeed, at other times commonplace and even unsatisfactory, as the *Tribune* building, which is less pleasing in execution than in the illustration. He set no fashion; perhaps his best work was too scholarly and refined for that. His great influence for good was in helping to found the system of architectural education in America, which has had such far-reaching results. The helpless ignorance of the majority of the men of his earlier years, with the unnecessary decoration and the bad design, owing to the want of training, made the advent of R. M. Hunt of great value. His work generally had a refining influence on American architecture, and public attention was drawn to it. He has left a legacy of good to his country in the most permanent and conspicuous of the arts, and our Royal Institute recognised this when he was presented with the Royal Gold Medal.

There is no personality so strong for good and with so much influence on the architecture of his country as Henry Hobson Richardson, the greatest American architect of the century. About two miles out of Boston is Brookline, a suburb of that interesting city, where, surrounded by trees, fairly open country, and with the blessed quiet of country surroundings, Mr. Richardson had his residence, and adjoining it his studio, an ideal architect's office on a large scale, with a great central open studio, where were exhibited drawings and large photographs of many of his recent works, illustrations of important buildings, both ancient and modern, and a fine collection of books &c. for reference. Raised a few steps above the floor of this, and against the outside wall, were alcoves, draughtsmen's work-places. Each had a short desk (for not more than two to work at) placed at right angles to the windows, the light being on the left-hand side. They were separated from each other by low partitions, but all open to the general studio. Through the windows the garden could be seen and a glimpse obtained of the tennis-lawn. From the studio hall access was given to the private offices for the chief assistants, there being a large staff.

For his own room Mr. Richardson had a large apartment, richly but quietly decorated with an artistic old-world effect. Quaint fittings, recessed ingle fireplace at end, and special architectural treasures made an appropriate room for this great man. Great he was in all ways: above common tall, massively proportioned, nature had given to him much breadth of treatment. Dark-complexioned and dark-skinned, with a fine open face and the brightest of eyes, he was wonderfully attractive. A Southern gentleman, the war altered his fortunes greatly, and brought the element of romance into his early life. To all his assistants he was courtesy itself, and his consideration for them was repaid by much devotion. To get



into his office was one of the prizes striven for by the architectural students at the Massachusetts Institute of Technology at Boston, and it was worth striving for. Some of the charm of his home-life made itself felt in his offices being part of his home. The surroundings altogether were more of the artist than of the usual nineteenth-century architect.

But, though a thorough artist, Richardson was a very good business man and a man of the world. He knew that the business of the profession was of as much importance as the art of it—that, however good work a man may be able to do, unless he has opportunities it avails little. And so he cultivated his clients and possible clients. On the Sunday he invited me to his studio, which was utilised for an afternoon concert. It was admirably adapted for this. A large and fashionable assembly were received by Mr. Richardson, and, in addition to hearing excellent music, finely played, they had opportunities of seeing many of the illustrations of his works, completed and in progress.

Not by any means a brilliant draughtsman, and giving only the roughest of sketches to be worked from, he yet impressed his individuality on all his works. He is said to have insisted on the work not being too much hurried, took the greatest care over all the details, and so put his own stamp on everything he did.

Becoming greatly attracted by the Provençal Romanesque work, he made a most careful study of it, and, obtaining the commission for Trinity Church, Boston, adopted that style for the design. This, one of his earliest works, is perhaps his best, and fixed his position among the architects of the country. The vigorous simplicity of Romanesque work and the grandeur of its masses appealed very strongly to his nature, and inspired him with the possibilities of developing and utilising it as best fitted for modern requirements. It gave the best opportunities for the disposition of masses and simplicity of detail. He avoided the unrest of the Gothic—particularly Victorian Gothic—the overloading with detail of much of the Renaissance and the strictly classical work. His work shows a power of centralising the features of his compositions, not neglecting the subordinate parts, making each of interest, but always giving breadth and simplicity to the whole. Avoiding unnecessary over-detailing of the parts and small-membered mouldings, all the parts on which labour is expended tell, and the carving is massed where its decorative value is greatest. The broad masses of carving on the cushioned surface of many of the mouldings and capitals of columns and surface decoration are utilised to emphasise and enrich the parts. Byzantine carving lends itself to this enrichment, and is not obtrusive, though Richardson employed it lavishly on some of his earlier buildings. The monumental character obtained in the churches and public buildings is better fitted for them than for domestic work. But all are of interest, sensible and practical, free from manufactured features, well adapted for their purpose and truthfully built. Special interest, too, is often given by utilising the architectural value of colour, bands of darker coloured stone binding the composition together and enriching it. No modern church has impressed me so much as Trinity Church, Boston. It is planned for Protestant uses, and in accordance with modern requirements. Maintaining the ecclesiastical character throughout, of fine but unusual proportions, and richly decorated, it is eminently a preaching-place, and so is well fitted for its use. Externally the central tower is the dominating feature of a dignified yet picturesque design, with detail carefully studied.

A cathedral was projected at Albany, the capital of the State of New York, for which Richardson was commissioned to submit a design. On this he laboured most lovingly, feeling that perhaps the great opportunity of his life had come. But a much smaller scheme was adopted;

and though attempts have been made to raise money to build this cathedral, it will now only remain as a design. Planned on European models, with the altar the central feature, the monumental and impressive character of such a building is maintained. There is a simple, dignified grandeur about the whole, the relations of the masses illustrating well the author's great powers of composition. The Law School at Cambridge, Massachusetts, with its admirable plan, has a quiet richness, and the different coloured stone used expresses it. Sever Hall, Cambridge, with its quiet dignity, expresses the simple plan required by a few large recitation rooms. The City Hall, Albany, not academic in treatment, is more striking and impressive than the much larger Capitol buildings, on which vast sums have been lavished under a succession of politically appointed architects and builders. His library buildings are picturesque in treatment, and the railway stations made of great interest but businesslike. In commercial buildings he expressed their business purpose, but maintained the architectural character which marks all his work. His domestic buildings, though somewhat heavy, have the quiet restful "home" feel, so very desirable. They are, however, the least successful of his designs. Yet each is remarkable in its way, and bears the impress of the master hand.

Even more valuable than his work has been his influence on the architecture of his country, particularly in the rising cities of the West. He set a fashion which has been followed in many buildings over the whole of the country, not merely in the following of Romanesque design or adopting Romanesque features, but in stimulating the higher aims, which are of the greatest importance to all true architects; ever keeping in mind, too, the beauty of simplicity—not the simplicity of poverty, which is expressionless, but the simplicity of richness, picturesqueness, quiet, or grandeur; expressing the use of a building in its external features; endeavouring always to get good composition and the proper values of light and shade; not manufacturing features, but using decoration and colour to emphasise the character of the building and make it harmonious throughout.

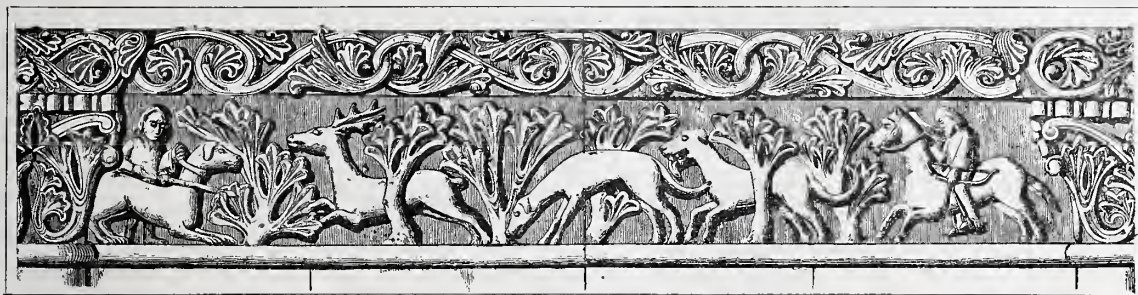
## THE GLASGOW INSTITUTE.

### Lord Leighton, P.R.A.

A Quarterly General Meeting of the Glasgow Institute was held in the Rooms, 187, Pitt Street, Glasgow, on Thursday, 30th January. The President, Mr. T. L. Watson [F.], having made appropriate reference to the death of Lord Leighton, the following Resolution was recorded on the Minutes, viz.—

That the Glasgow Institute of Architects desires to record its sense of the great loss it has sustained in the death of Lord Leighton, one of its Honorary Members. Lord Leighton was President of the Royal Academy from 1879 till his death. In 1894, on the recommendation of the Royal Institute of British Architects, he was awarded the Royal Gold Medal in Architecture. He was raised to the peerage on the first day of the present year. On the 31st day of January 1895 Lord Leighton, then Sir Frederic Leighton, was unanimously elected an Honorary Member of this Institute, and in accepting office, and subsequently, he expressed his appreciation of the honour and his interest in the welfare of the Institute. Throughout his life Lord Leighton showed the keenest appreciation of the art of architecture, and especially of classical and Italian architecture. In addition to his work in oil painting, he was distinguished in fresco painting and in sculpture, and he was an accomplished musician and a brilliant speaker.

It was agreed to exhibit a Selection of the R.I.B.A. Prize Drawings in the Rooms on dates to be afterwards announced. The congratulations of the Meeting were offered to Mr. A. N. Paterson [F.], a member of the Glasgow Institute, on his being awarded the Godwin Bursary of the Royal Institute.



SAINT-FRONT OF PÉRIGUEUX, AND THE DOMED CHURCHES OF  
PÉRIGORD AND LA CHARENTE. By R. PHENÈ SPIERS [F.], F.S.A.

Read at the General Meeting, Monday, 17th February 1896; and registered at Stationers' Hall as the property of the Royal Institute.

IN 1851 Félix de Verneilh, a well-known antiquary of Périgueux, published a work entitled *L'Architecture Byzantine en France*, being a description of the church of Saint-Front at Périgueux, and of the domed churches of Aquitaine. The work was well illustrated with plans, sections, views, and details, all drawn and engraved by Léon Gaucherel, a well-known artist of the period, who had been recommended by Viollet-Le-Duc, and who executed his commission with all that artistic power and beauty of line which characterises the architectural publications of our French confrères.

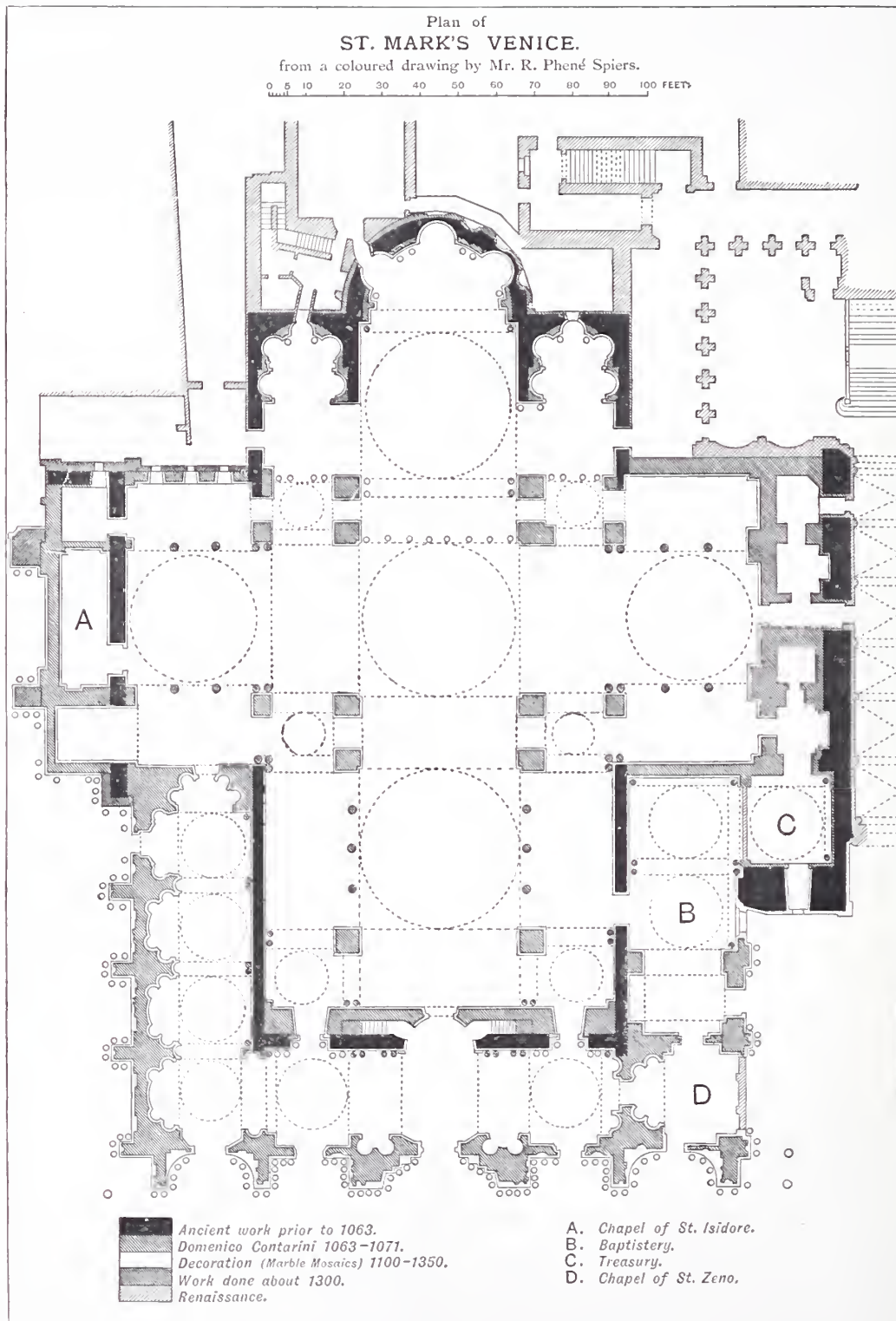
De Verneilh explains in his preface that Gaucherel was not an architect, and himself still less so; nevertheless, between them, they undertook an architect's work in measuring and delineating the edifice, and he trusts that any shortcomings in the work may be put down to excess of zeal. Beautiful as the drawings are, they are not without their faults, and, as might have been expected, in some cases De Verneilh entirely fails to grasp the constructional peculiarities of the most important feature, viz. the pendentives of the domes, and he attaches importance to others which are either of no account or are inaccurately represented.\* Notwithstanding these shortcomings, the quarto volume published in 1851 is still the only standard work on the subject, and, with the exception of three plates drawn for Gailhabaud by Viollet-Le-Duc in 1853, and one or two drawings in the Rev. J. L. Petit's work entitled *Architectural Studies in France*, and published in 1854, no attempt has been made either to produce fresh illustrations, or even to analyse the structure, notwithstanding the immense strides made in archæological research during the last forty years. Three years ago, when occupied with the new edition of Fergusson's *History of Architecture*, I had to work up the subject, and I took the opportunity afforded me by the visit of one of my students, Mr. Bolton, to Périgueux to obtain some information relative to the construction of the church; the valuable notes, however, which he was kind enough to obtain for me were not sufficient; so that I determined last year to pay a second visit to the town. It is the result of that visit which I propose to lay before you this evening.

I ought perhaps to preface my description by saying that the principal objects of De Verneilh's book were, first, to prove that the church of Saint-Front (and to prevent any

\* I allude here more particularly to what he calls "long- and-short" work, having a vague idea that early Saxon buildings in England are distinguished by that construction; but the alternate high and low courses as shown in the casing of the central piers never existed. The courses varied in height just as the stones from the quarry came to the mason's hand, and when they were taken down during the restoration, the eight or ten narrow courses (not alter-

nating as shown in his drawing) of the whole pier bonded no farther into the old work than the others. Jules de Verneilh's (brother of Félix de Verneilh) etching, published in the *Antiquities of Périgueux*, probably shows the real construction. Curiously enough, De Verneilh publishes this same drawing in Didron's *Annales archéologiques*, vol. xiv., apparently forgetting the fact that in his book alternate courses are shown.—R. P. S.





[The block of this plan has been kindly lent for the present purpose by the Council of the St. Paul's Ecclesiological Society, having originally served to illustrate a Paper by Mr. Spiers entitled "The History and Early Development of St. Mark's, Venice," published in the Society's "Transactions," Vol. III.]

FIG. 1.

misunderstanding I shall in future call it the five-domed church, to distinguish it from the old church of Saint-Front) was founded about 984, and was built in imitation of St. Mark's at Venice; and, secondly, that the five-domed church of Saint-Front was the model from which all the domed churches in Aquitaine were copied.

As St. Mark's was built in imitation of the church of the Holy Apostles in Constantinople, it had a distinctly Byzantine origin in the employment of domes. The five-domed church of Saint-Front was therefore looked upon as exhibiting a Byzantine character, and all the churches which are assumed to have taken it as their model, so far as the employment of the dome is concerned, are classed as Byzantine.

St. Froterius, Bishop of Périgueux, is recorded to have been buried in Saint-Front in 991. De Verneilh assumes, therefore, that the church may have been founded about 984. Bishop Martinus, who followed, died in the year 1000, and he and Raoul de Couhé, who succeeded him and died in 1013, were also buried in the church, the latter, according to the records, having directed the building of the church for twelve years. Lastly, the church was dedicated in 1047.

The dates given by De Verneilh for St. Mark's at Venice are 977 for the foundation of the church by Orseolo, Doge of Venice, and 1071 for its completion under Domenico Contarini and Domenico Selvo. In order partly to account for this singular introduction of a foreign style, De Verneilh draws attention to the fact that a Venetian colony of merchants settled in Limoges in the latter part of the tenth century, and he suggests that they may have contributed in some sense to the immigration of Venetian artists.

Within the last few years, however, the restoration of the church of St. Mark, and the temporary stripping of its marble facing in order to restore the brick core, revealed the fact that portions of the walls were of more ancient date than Orseolo's time. This caused a more diligent search among the archives of Venice, which resulted in the discovery that Orseolo's work was confined to the restoration of the old basilica, which had been partially destroyed by fire, and that the five domes which now form its chief characteristic were not erected till about 1063, under Domenico Contarini, who used up in the new structure many of the new capitals and columns provided by Orseolo in his restoration of the old basilica. The record also states that the new five-domed church was erected in imitation of the church of the Holy Apostles at Constantinople. This church was pulled down, in 1464, by Mahomet II., to provide a site for his mosque, so that we have only the description of the church by Procopius to go by.

Now, it is evident that if the five-domed church of St. Mark was not erected till 1063, either Saint-Front could not have been copied from it, or a later date must be ascribed to the latter for its erection. But De Verneilh's arguments as to the one being a copy of the other are, to my mind, conclusive, so far as the plan and general design are concerned, and, as will be understood, this opinion was strengthened by other considerations, to which I shall draw your attention later on. It has been suggested that the church of the Holy Apostles at Constantinople might have been the model on which Saint-Front was based, but there is absolutely no evidence to support such a conclusion. Besides, the settling down of a Venetian colony of merchants at Limoges (who, by the way, came over in 988, or four years after the date given for the foundation of the five-domed church of Saint-Front) might at a later period, through their descendants and others who followed them, have brought Venice and the Périgord into communication with each other, whereas there is no suggestion of any intercourse with Constantinople. However, as a matter of fact, it does not affect the arguments I am about to lay before you, and therefore I pass by that contested question.

The task which I have taken upon myself to-night is to prove that the buildings which lie at the west end of the five-domed church, and which are known as the Latin church, and attributed to Chronopius II., Bishop of Périgueux in the early part of the sixth century



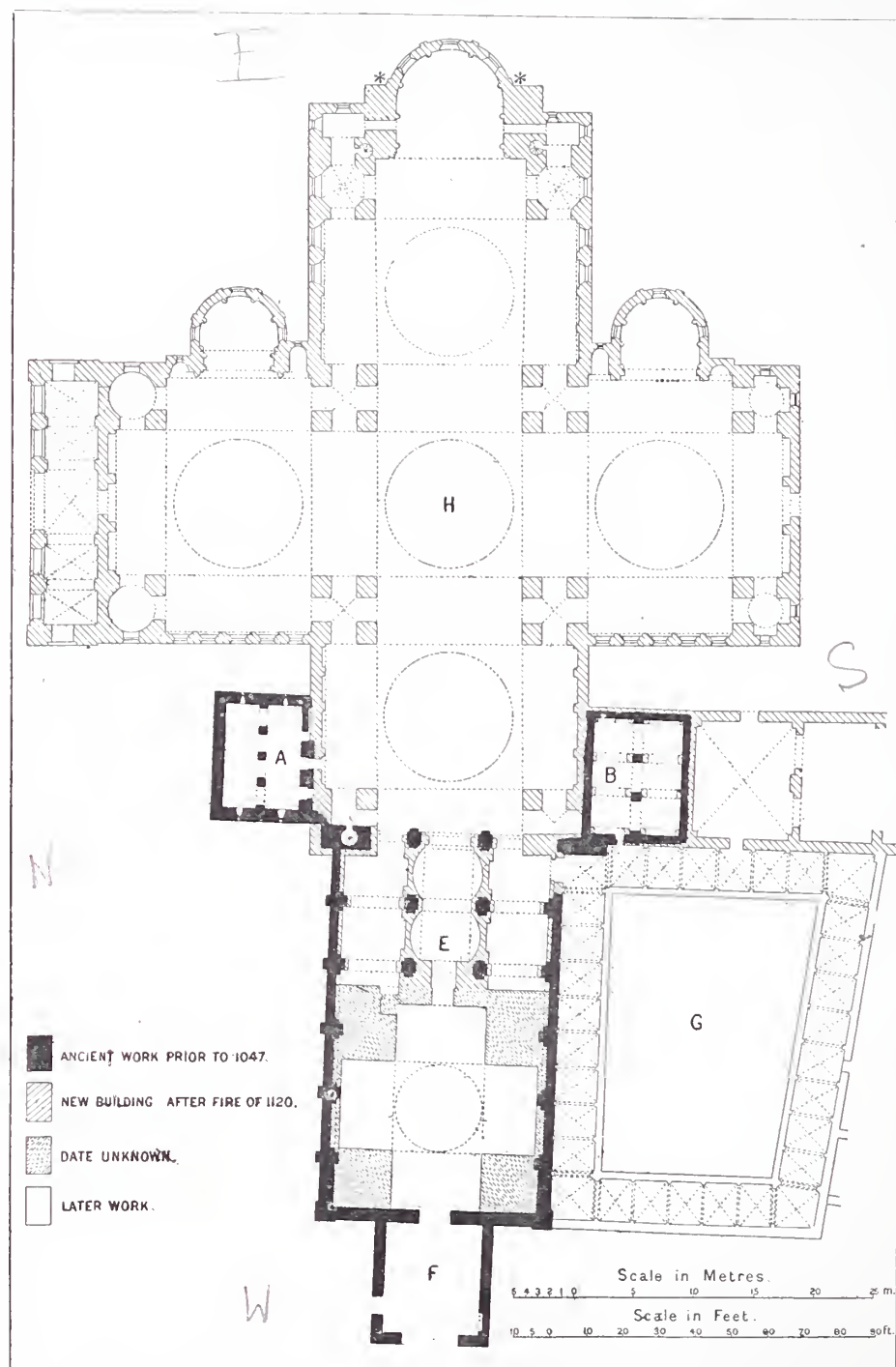


FIG. 2.—PLAN OF SAINT-FRONT, PÉRIGUEUX.

A, B, Confessionals. E, Nave of *vieille* Church. F, Porch of same. G, Cloister. H, the five-domed Church.

\*\* This apse was taken down in the 14th century.

(505–36), are in reality those of the church commenced by Bishop Froterius, continued by other bishops, and dedicated on 21st March 1047 by the Archbishop of Bourges; that this church was burnt in a great fire which took place in 1120; and that subsequently the five-domed church was built in imitation of St. Mark's, so far as the plan and general design are concerned—St. Mark's at that time being one of the wonders of Europe.

My best course will probably be to describe briefly the churches of Saint-Front first.

Commencing with the five-domed church [fig. 2], its plan is that of a Greek cross, with domes over the nave, crossing, transepts,

and choir, all more or less of the same size. In St. Mark's [fig. 1] the domes over the transepts and the choir are smaller, owing to their being built between more ancient structures. In

Saint-Front the three apses are placed respectively at the east end of the choir and on the east side of the two transepts. In St. Mark's they retained the triple apse of the old basilica. In Saint-Front the gallery passage is set against the wall [fig. 3]. In St. Mark's they utilised the columns and capitals of the old basilica, and brought the gallery out to the front. The barrel-vaults which carry the domes in St. Mark's are wider than those of Saint-Front, and the openings in the piers carrying the latter are therefore much narrower. Above the impost moulding of the main piers the general design is the same, but the construction and interpretation of the arched vaults of Saint-Front (which are pointed), the pendentives, and the domes differ. The domes and vaults of St. Mark's were covered with lead (I am referring to the church as completed at the end of the eleventh century), the domes of Saint-Front with stone lanterns of remarkable design [fig. 4], and the vaults with stone slabs, stepped. Both externally and internally the design of Saint-Front was extremely simple: it was faced with fine ashlar masonry, and the decoration is almost confined to the capitals of the wall-arcades and to the double tier of columns in the apses. St. Mark's was built with a brick core, and two centuries were spent in decorating it with marble slabs and mosaic, and with capitals brought over from the East. Whether the builders of Saint-Front ever contemplated a similar outlay, or whether they intended to decorate the interior with painted decoration, is not known. The domes were built in rubble masonry and covered with plaster, so that it may have been intended originally to paint their surfaces. I am not aware that this was ever done.\*

At the west end of this five-domed church, and astride two bays of the nave of an older church, was built an enormous tower. A full description of the way in which this was done is given by De Verneilh in his book, and is certainly a most admirable account. The tower is plain up to a cornice on a level with the cornice of the lanterns over the domes of the church; above that are two lofty storeys, with two tiers of openings in each, the lower storey decorated with pilasters and capitals, the upper one with semi-detached shafts and capitals. It is crowned by a pyramid and a cone, carried on forty-eight shafts.

The two bays to which I have referred, as well as other buildings on the north-east and south-east respectively, and on the west side, formed part of a church which is known as the old or the Latin church. The two bays were probably the fifth and sixth bays of the church, on the east side of which may have been another bay, and a transept between the two confessionals which still exist, and beyond this transept three apses [fig. 23]. These were all removed when the five-domed church was built. On the west side of the two bays under the great tower, and between them and the west front, there is space for three more bays of equal size to the other two and one narrow one. The nave was covered with a timber roof, as there are no traces of a vault on the eastern side of the west front. The aisles were vaulted over with a succession of barrel-vaults, running at right angles to the nave. It is probable, therefore, that the western bay was vaulted in the other direction to resist the thrust of the series of barrel-vaults, and this may account for the narrow bay. At the east end, on the north side, there is a pier, with a staircase in it. On the south side nothing remains of the old work except a thick wall running into the cloisters.

The west front still remains perfect, except for the grievous mutilation of its decorative features. It forms the internal wall of a house built against it on the west side, and most of its decoration was chipped off, the whole being covered with stucco. It was in this condition in the fifties, when De Verneilh was measuring it, and he had to trust to sketches made by a M. de Mourcin in the beginning of the century. This house has lately been acquired by the Government and the stucco removed, so that it is possible now to see some of the detail left.

\* The west dome of the cathedral of Cahors was painted with figure subjects, which were discovered in 1890 under several coats of whitewash. Others were found in the east dome, but in too bad a condition to be preserved.—R. P. S.



Though fairly correct in the main lines, the artist has improved upon the details. Throughout this part of France they seem to have lavished all their resources of decorative design on their west fronts, the interiors being kept perfectly plain, and in this respect the west façade of the

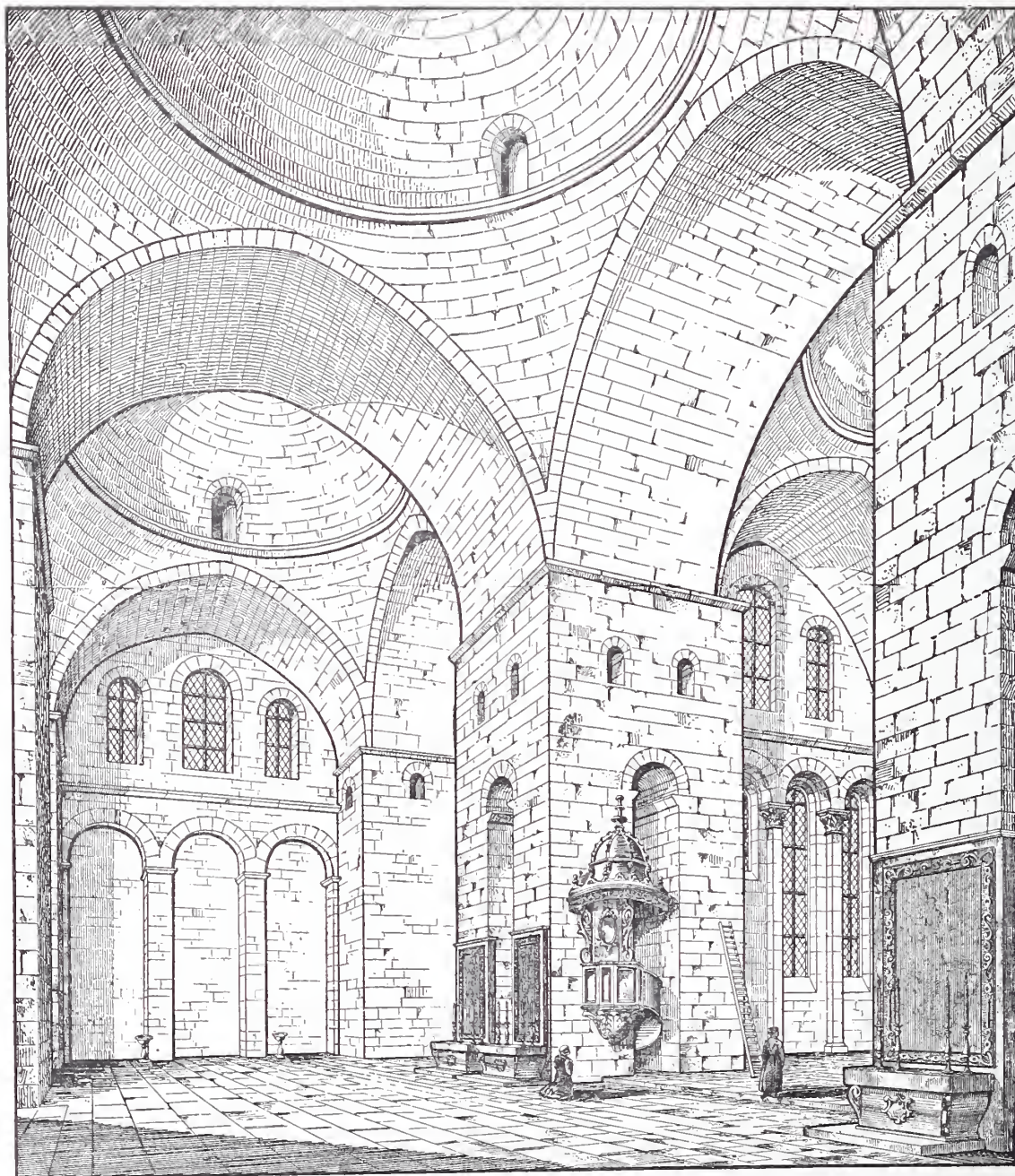


FIG. 3.—INTERIOR OF SAINT-FRONT. (From an illustration by the late Edmund Sharpe.)

church must have been a very remarkable frontispiece. Unfortunately, the storeys of this house were only about 7 feet in the clear, the flooring was full of pitfalls, and there was very little light, so that I could only measure and draw some of the details. These, with an outline



FIG. 4.—EXTERIOR OF SAINT-FRONT. (From an illustration by the late Edmund Sharpe.)





taken from De Verneilh's work, will better explain than words could the nature of the design. In front of the west end was a porch, about 17 feet square, with a remarkable frieze, mutilated as regards its figure decoration, but otherwise very perfect, and visible from the market-place; the gable above it is hidden in other constructions. The cloisters are of twelfth- and thirteenth-century date; and as they and the other monastery buildings do not concern my argument, my description stops here.

I propose now to take up the several parts in detail, with a view of arriving at the probable date of their erection. Commencing with the so-called Latin church, this is sometimes called "*la vieille église*," to distinguish it from the other. De Verneilh, beyond calling it once Merovingian, does not attempt to fix a date. The paragraph in which he uses the word is amusing from an antiquarian point of view. *In the Latin church, he says, the pointed arch does not appear anywhere, even in the vaults; a remark which might seem superfluous; but as the pointed arch is largely used in the Byzantine basilica, one almost expected to find it in the Latin church. When pointed arches are accepted as tenth-century work, it would cost little to go further back, even to the Merovingian epoch.* As the only other period on record in which a church is said to have been built is during the episcopate of Chronopius II. (505–536), De Verneilh calmly suggests the possible employment of the pointed arch in France in the sixth century.

Now let us examine the structures still existing. The confessionals on the north and south sides are each divided by a row of piers carrying barrel-vaults. The masonry of the walls, piers, and arches is of fair size,\* well wrought, and with thick mortar-joints in relief. The imposts of the arches which served to carry the centres are not returned on the face of the piers, where they would not be required. All of these characteristics accord best with the work of the eleventh century as found in the crypts of Saint-Cyr, Nevers (1028), or of St. Stephen at Auxerre, about the same period. They show a great advance when compared with the outer crypt of Saint-Germain, also at Auxerre, of the ninth or tenth century. It is quite impossible that the confessionals could date before the time of Charlemagne, because the masonry employed before, and, in fact, long after, his reign was composed of small stones with thick mortar-joints, and with courses of bricks every three feet in height. It is true that, as De Verneilh points out, a single row of bricks two inches thick is built in under the impost course, but that is an argument against their age. Not one row, but two or three, would have been employed in the Merovingian period, and these brick courses would have been continued throughout the confessionals if they had been built prior to the tenth century. Bricks also would have alternated with the voussoirs of the arches, as in the Basse-Œuvre at Beauvais, Saint-Martin at Angers, Savenières, and all early buildings up to and including the tenth century.

The nave is separated from the aisles by complex piers—that is to say, on the side of the nave is a pilaster strip which probably carried the tie-beam of the main trusses, or possibly an arch † thrown across the nave, as in San Miniato, Florence (1014). On the aisle side is another pilaster or respond which carried the transverse arched ribs. But the coupling of piers was not introduced into France till the eleventh century. The earliest examples known are in Italy (which at this time was quite a century in advance of France), in the church of Sant' Eustorgio at Milan, dating from the beginning of the tenth century, where they were introduced to carry

\* The courses in the piers are 12 inches high.—R. P. S.

† There is an argument in favour of arches. The barrel-vaults perpendicular to the nave rise towards the nave wall. De Verneilh thinks this might have been to give a weathering to the stone slabs which covered them. But there are much simpler methods than this

of giving a weathering. It is probable that the rising of the barrel-vaults was intended to counteract the thrust of these arches thrown across the nave as suggested, unless they had in contemplation the vaulting of the nave at a later date, never realised.—R. P. S.

arches across the nave and aisles. A second example is found in the church of SS. Felix and Fortunatus, near Vicenza, added in the second half of the tenth century. In churches of earlier date in France the cross arches were carried on impost mouldings crowning a square pier. We find an interesting example of this in the church of Germigny-les-Prés (Loiret), built by Charlemagne in 806. The church was said to have been built in imitation of Aix-la-Chapelle, but there is no resemblance between the two, except that barrel-vaults were employed on each side of the square central tower, and that the piers were built in stones of unusually large size, for that period at all events: here the piers are all square [fig. 5], and the four cross arches are all carried on bold impost mouldings. At Granson, in Switzerland (built in the beginning of the eleventh century), rather than carry the pilaster down the pier, a recess is left in the upper part of the pier [fig. 6] to give greater play to the arches and their imposts. In other words, the *articulation given to the architectural members which led to the great development of Romanesque and Gothic architecture was not recognised till the eleventh century in France.*

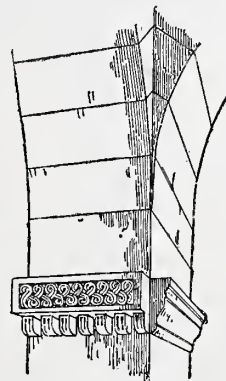


FIG. 5.—IMPOST,  
GERMIGNY-LES-PRÉS.

With regard to the barrel-vaults over the aisles running at right angles to the nave, the earliest-dated examples known are those in the narthex of Tournus Cathedral, built after the fire of 1006, and dedicated, with a portion of the nave, in 1009. De Verneilh suggests that they were copied from those of Saint-Front, forgetting that, according to his version as regards the date of this work, there is a trifling difference of six centuries between the two structures. Tournus, it must be remembered, is near Cluny, the great building centre of France in the eleventh century, and it is much more probable that they were built there first to avoid a second disaster by fire; thence they went to the north, to Saint-Remy, at Rheims; to the west, to Limoges (1028); and thence descended to Périgueux, probably about 1030. The thrust of the arches carrying these cross vaults on the south side is counterbalanced by the existing cloister, which probably replaced an earlier example. On the north side are buttresses. This, again, is an eleventh-century introduction. The Romanesque architect of Provence had already at an earlier date used pilaster strips with capitals, but this was a Roman tradition, and was employed only to break up the wall-surface. There were no buttresses at Germigny. The earliest examples known in France are the semicircular ones of Saint-Remy at Rheims, of the tenth century. The square or rectangular buttress dates only from the eleventh century.

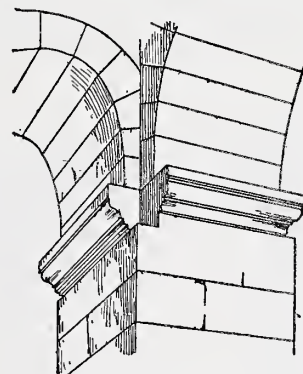


FIG. 6.—IMPOST, GRANSON.

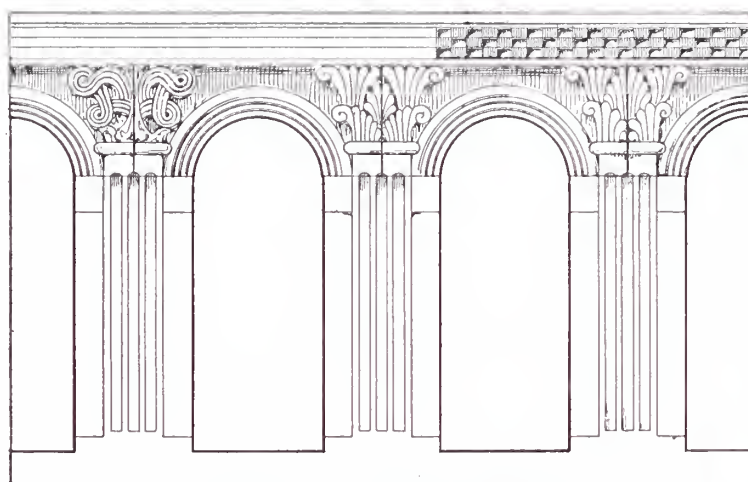
When we come to the west front, we are on more certain ground. The whole is constructed in ashlar work in regular courses; and even in ascribing 1040 as the date, the execution of its ornamental detail is in advance of that found elsewhere in France.\* This is specially the case with the singular zigzag strings which decorate the front. In earlier examples, as in Saint-Généroux, we find hood-moulds to the windows, and triangular pediments between them. We also find a surface decoration similar to that which is known as *opus reticulatum*, and which they borrowed, probably, from Roman sources. Occasionally also, as in Saint-Généroux, patterns were incised on stones, and filled in with some coloured material. The

\* I am informed by M. Lambert, the architect-inspector of the works, that there are indications of four or five alterations or additions in the old church; so that it is possible the completion of this west front was carried far

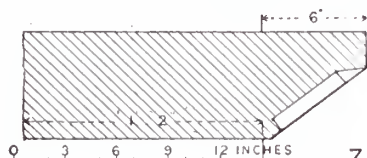
into the century, in which case its design and execution might bring the date more in accordance with that of other known examples, as, for instance, the west front of Le Mans Cathedral.—R. P. S.



architect of Saint-Front went further: he built his zigzag and horizontal strings 14 inches [fig. 7] into the wall, and gave them a projection of 6 inches. The geometric ornament on them is



ARCADE ON WEST FRONT.



ZIGZAG MOULDING.

FIG. 7.—THE OLD CHURCH, SAINT-FRONT.

small pilasters; the arch, the half capital on each side, and a portion of the shaft are all cut out of a single slab, the joint running through the centre of the capital. The frieze over the

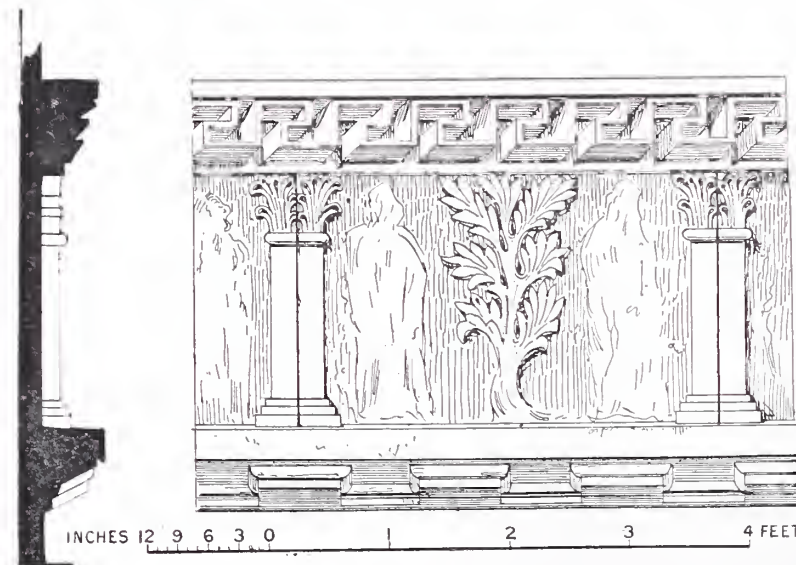


FIG. 8.—FRIEZE OVER PORCH OF OLD CHURCH, SAINT-FRONT.

cut with a regularity and precision quite unknown in earlier times; and although in some parts one meets with an archaic design, that is probably only due to a desire to introduce new features.

This remark applies to the arcade below the zigzag decoration [fig. 7] and to the ornamental frieze on the porch [fig. 8]. Here, it seems to me, the artist was endeavouring to reproduce the designs found on ancient sarcophagi. The arcade is divided by

the joint through the centre of capital and shaft. The frieze over the porch is similarly divided with the joint through the centre of capital and shaft. In the centre is the tree of life—a favourite subject in ancient sarcophagi—with figures on either side which have all been chopped off. The introduction of figures at all is a proof of the late period of this front, for throughout the dark ages, from the fifth to the tenth century, even carved ornament is rarely if ever found, and at Germigny-les-Prés (806) nearly all the ornament is in stucco. It was the absence of this power to

find artists who could carve ornament which probably led the designer of the churches of the Merovingian era, and, with rare exceptions, those of the Carolingian era, to decorate the wall-

surfaces of their buildings with courses of bricks and zigzag patterns of the same, and to alternate the voussoirs of their arches with brick courses. Saint-Martin at Angers (of which the foundation was laid by Hermengarde, the wife of Louis le Débonnaire, just before her death in 819), Savenières, Vieux-Pont-en-Auge (Calvados), and the Basse-Œuvre at Beauvais, all attributed to the same period, may be quoted as examples.

I have omitted to state that the nearest approach in style and character to the capitals of this arcade and frieze are those in the crypts of Saint-Cyr, Nevers (1028 A.D.), and of the cathedral of Auxerre (1030 A.D.).

The church which I have just described measures approximately 200 feet long and 130 feet through the transept, and including the two confessionals. It was therefore an important church for those times, and when compared with the other church which was dedicated on the same day, viz. that of St. Stephen of the City, was probably regarded as the more beautiful of the two.

If I have been able on architectural and constructional grounds to prove that the so-called Latin church could not have been erected before the eleventh century, it must have been the building referred to in the records,\* and the five-domed church must be attributed to a later date. The next records relative to the church are of the greatest importance as regards this question. There are three of them, taken from ancient chronicles, and as they are in Latin, I have given them in full in a note.† The third is apparently a transcript from the second, but the word “burgus” is introduced to distinguish the town church of Saint-Front from the city church, viz. that of St. Stephen the Cathedral.

The other two records read (leaving out the allusion to the church of St. Mary Magdalene, Vézelay,‡ which was burnt apparently on the same day) :—

1. “In the year 1120, 22nd of July, the Monastery of Saint-Front of Périgord was burnt, “with many men and women.”

2. “William of Alba-Rocha, Bishop of Périgueux, in whose time the Monastery of Saint-Front was burnt down, with all its ornaments, in a sudden conflagration, for the sins of the “people, and the bells in the bell tower were melted in the fire. At that time the monastery was “covered with timber roofs.”

Exception has been taken that these records refer to the monastery and not to the church. But all the earlier documents also refer to the monastery and its building; consequently it may be assumed that the church was the more important portion. At all events, there is no doubt that the bell-tower was part of the church; and as the fire melted down the bells in it, the timber-work referred to in the records was probably that which covered in the nave and transepts.

The last sentence of the second record is of the greatest importance. “*Erat tunc temporis “monasterium ligneis tabulis coopertum*” seems to me to prove that the chronicler desires to call attention to the fact that he was not speaking of the then existing church, which was built entirely in stone, but of another and earlier church, the roofs of which were in timber, as those which I have described as covering the nave, and probably the transept, of the so-called Latin church.

It is quite evident that the sudden conflagration quoted in the records could not apply to

\* Anno incarnationis D. noningentesimo septuagesimo sexto, Froterius episcopus ab Hugone, Capetio Francorum rege, Petragoras missus est et rexit ecclesiam annos 14, menses 6, dies 3. Obiit autem anno D. 991, V. idus decembris, et sepultus est in basilica S. Frontonis. Hic episcopus cepit edificare magnum monasterium S. Frontonis.

† Anno MCXX. XI. Kalend. Augusti monasterium Mariæ Magdalene de Vizeliaco combustum est cum 1127 (sic) hominibus et feminis. Similiter incensum est monasterium sancti Frontonis civitatis Petragoricæ cum multis hominibus et feminis.

Guillelmus de Alba-Rocha, episcopus petragor., cujus tempore hujus sancti Frontonis et monasterium cum suis ornamentis repentino incendio, peccatis id promerentibus, conflagravit, atque signa in clocario igne soluta sunt. Erat tunc temporis monasterium ligneis tabulis coopertum.

Hoc tempore burgus sancti Frontonis monasterium cum suis ornamentis repentino incendio, peccatis id promerentibus, conflagravit, atque signa in clocario igne soluta sunt. Erat tunc temporis monasterium ligneis tabulis coopertum.

‡ The narthex of Vézelay was built in 1130, after the fire.



the five-domed church, for, as I have already described it, there is no timber whatever in its construction—floor, walls, vaults, domes, lantern, and roof-slabs are all in stone—so that there was nothing to burn; and the same applies equally to the tower, the west buttressing of which shows that the nave roof of the old church existed no longer.

My next task is to attempt to prove that the five-domed church and the tower on the west side were not constructed till after 1120 A.D. By this time the church of St. Mark at Venice was completed, so far as its main structure was concerned, and already the panelling of the walls with marble and the decoration of its vaults and arches with mosaic had made some progress. It was one of the wonders of Europe, and the idea of copying its plan and general design would appeal at once to a race of builders who for more than a century, as I shall prove later on, had been building domed churches throughout Aquitaine, who were perfectly acquainted with their own methods of building domes and pendentives, and therefore would not be obliged to trust to foreign workmen to execute them.

In speaking casually of the restriction in the size of the transept and choir domes of St. Mark's, Venice, I stated that it was in consequence of their desire to retain ancient walls; and the same remark applies equally to the other domes. The external walls of the old basilica, and the foundation walls, at least, of the aisles, fixed all the dimensions. (The width of the nave of St. Mark's is the same as in that of the old basilica.) Here in Saint-Front we find for the west dome a parallel instance of restriction. The two confessionals of the early church have been preserved, and the dome and its aisles are placed between them. There was no necessity to limit the size of the other domes, and in this particular they did not copy St. Mark's, all the domes being of equal size.

This is, of course, purely a surmise on my part. It must be taken for what it is worth when comparing the two plans.

I have now to analyse the five-domed church as I did the other; and here my task is more difficult, because this remarkable church has actually, since 1856, been almost entirely pulled down and built up with new material. On the south transept wall remains about 30 to 40 feet superficial of the ancient stonework, and here and there within the building a lean capital suggests that it may be the old one, scraped, to make it accord with the new work.

Unfortunately for the historical value of the monument, the late M. Abadie,\* instead of copying the old work, was allowed to introduce "improvements" of his own—improvements which he thought the early masons would have adopted if they had had the taste and possessed the knowledge of the present day. For instance, the great pointed arched vaults which carry the pendentives were originally struck from a level below the impost mouldings [fig. 15], so that, as a matter of fact, the height of the arch was only a little greater than the half-span of the arch. As I shall point out later on, the early masons had already found out the tendency to sink in the upper voussoirs of a circular arch; consequently, in accordance with their tradition, they adopted the pointed arch. Anxious, however, to retain the proportions of the arches of St. Mark's, which are circular and slightly stilted, they introduced the method adopted in the western dome of St. Stephen, and struck their pointed arches from a level below the impost, and so they are shown in De Verneilh. But Abadie thought the appearance had a "debased" character, so he raised them [fig. 16],† the springing being now 21 inches above the impost level instead of about

\* The architect entrusted with the restoration.—R. P. S.

† There seems to be a disposition of late in Paris to disguise the fact that in the restoration of Saint-Front alterations have been made, or that the centres of the arches have been changed; some denying that the level has been raised at all, and saying that it is an idea which should be at once refuted. But Abadie in his lifetime made no secret of the fact; on the contrary, in 1875, when

he met Edmund Sharpe and others of the A.A. excursion party, he distinctly stated that he had raised the centres because the arches had a debased appearance; that to attempt to reproduce irregular methods of construction because the early masons had to be content with tentative efforts would be illogical, and that the architect would fail in his duty if he did not avail himself of all the resources of modern construction, so as to produce a result

15 inches below it. He also altered the distance between the centres of the pointed arch, which were about 5 feet 6 inches apart and are now only 2 feet. I might here point out that, at some period unknown, the four central piers of the church had been encased with ashlar measuring about 9 inches thick.\* De Verneilh has attempted to account for this by a suggestion that these piers were giving way, and that this was done to strengthen them.

Having raised the arches, Abadie was obliged to increase the height of the upper portion of the church, which now presents a proportion different from that of the original structure. The original eastern apse was of shallow depth: it was replaced, in the fourteenth century, by a chapel dedicated to St. Anthony, of moderate height, 60 feet long. This Abadie removed, and replaced by a Romanesque apse of enormous size, covering the whole area of the Lady Chapel, and with a vault rising higher than the main barrel-vault of the church, so that it now dwarfs the whole building. He also, I think, raised the cupolas and the lanterns which enclose them, and covered the cupolas with rings of pine-cone crestings which never existed, and which in all other buildings of Aquitaine are confined to the cupolas of towers. On the centre cupola there existed a small lantern cupola carried on shafts, but on the others were smaller features representing pine-cones: these he also replaced with lantern cupolas, and crowned the plain pyramids which flanked the gable-ends with similar features, so that the cathedral now bristles over with pinnacles, like the Cathedral of Milan, and the simplicity of the old work is no longer maintained.

This, however, is a digression from my subject. The drawings of De Verneilh, Viollet-Le-Duc, Sharpe, and Petit, though they do not quite correspond in detail, are sufficient to prove that the execution of the ashlar masonry throughout, the regularity of the coursing, the fineness of the joints, the setting out and building of the pendentives and domes, must have been the result of long traditional experience of at least a century, and certainly not the first attempt to build such complicated features as those which are found throughout Saint-Front. The domes and pendentives show much greater knowledge of stereotomy than that which is found even at Fontevrault and Angoulême, built in the first quarter of the twelfth century.

This is, however, not the only evidence I have to lay before you. In Périgueux itself is a valuable example, built about 1020—a fragment of the west dome and pendentive of St. Stephen, the church which was consecrated as the cathedral, on the same day as the church of Saint-Front, in 1047. Of this fragment I made a careful sketch last year with the camera lucida, which I have enlarged [fig. 9], adhering strictly to the jointing drawn on the spot. In comparing this with the pendentive of Saint-Front, drawn out from De Verneilh's measured drawings [fig. 15], you will be able to judge for yourselves whether, at a period when the architectural development throughout France was progressing with such rapid strides, viz. the first fifty years of the eleventh century, it is possible that in 990 they should have been able to work the ashlar masonry with the perfection shown in Saint-Front, and thirty years later, when building the cathedral in the same town, there should be so remarkable a falling-off in the execution. This palpable discrepancy between the construction of the two buildings naturally also struck De Verneilh, who tries to excuse the crude and tentative efforts in St. Stephen's on the plea that the "architect of Saint-Front" (about whom nothing, by

which should last for many ages. This opinion was held also by the Bishop of Angoulême, to whom I had the privilege of being introduced towards the end of the excursion. The bishop asked me if I was content with the results of my tour. I, not knowing his views, and perhaps incautiously, replied that I had been very glad to see these churches before they had been restored. This rather piqued his lordship, who replied that, when those responsible for the proper maintenance of the cathedrals and churches had been able to persuade the Government

to make grants for their restoration, it was advisable that the works should be carried out as completely as possible, so that they might last for centuries.—R. P. S.

\* When this was done, the impost moulding was raised above the old one. I am informed by M. Lambert that when this casing was removed during the restoration it was found that the stone used in the primitive construction was of inferior quality, hence the necessity to strengthen the piers.—R. P. S.



the way, is known) “died before he was able to train good pupils amongst the monks of the “abbey. He was no longer there to give a profile of the moulding”—there are no mouldings, as we understand the term, in either structure—“or even to make a design for a capital. All the “masons could do, therefore, was to copy Saint-Front as best they could, carefully avoiding all “difficult construction such as that involved in the arched openings in the great piers, leaving “out all the decoration, and to trust to gaining time by hurrying on the construction” (*sic*). I am afraid this plea can scarcely be accepted as valid. The pendentives of the second dome of St. Stephen—viz. that now forming the first bay of the nave—show the same irregular junctions between the pendentives proper and the voussoirs of the pointed arch-vault carrying them. The construction at that time was so tentative that it was necessary to cover the stonework with

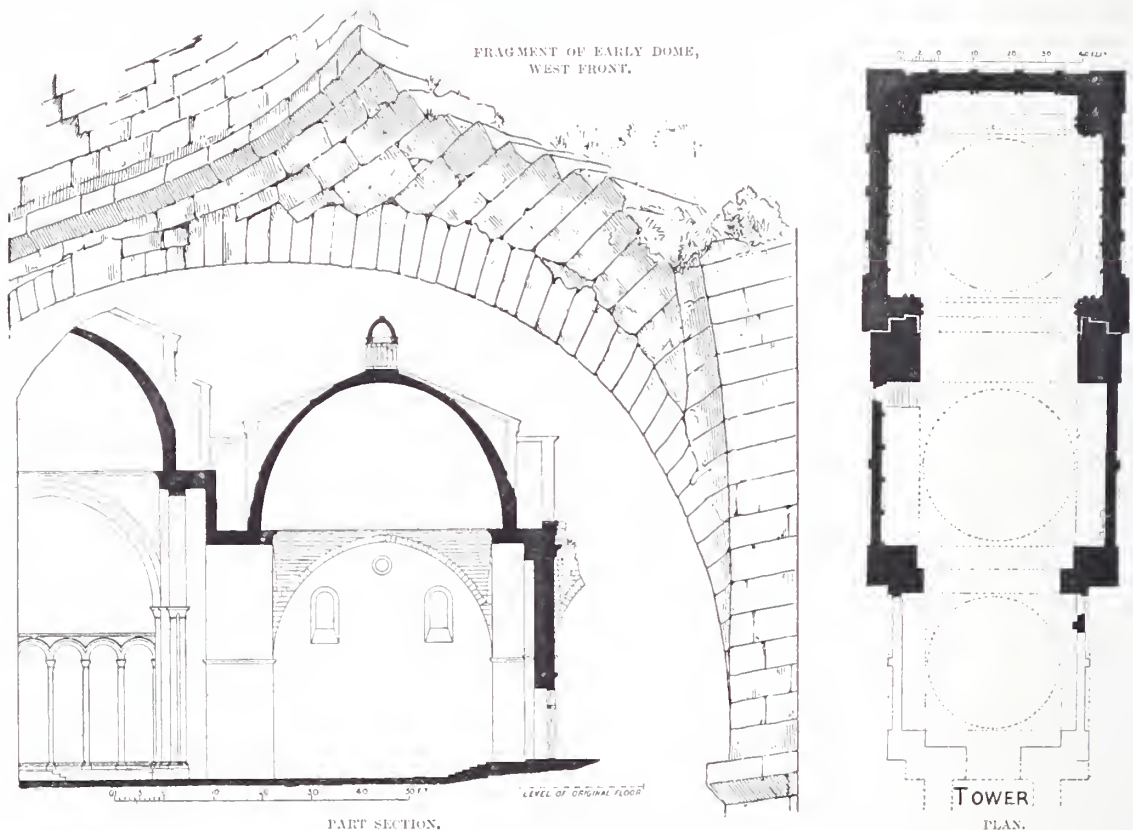


FIG. 2.—ST. STEPHEN, PÉRIGUEUX.

plaster. This is the case with all the other early domes of the eleventh century, at Saint-Avit-Sénieur, Cahors, and Saint-Jean-de-Cole. At Angoulême is, I think, the first dome in which the ashlar-work was sufficiently well wrought to dispense with a plaster coating.

I now come to the second portion of my evidence, that which is shown in the capitals and other decorative accessories of the building. De Verneilh lays great stress on their Byzantine character, and his beautiful engravings would seem to bear out his contention. The influence of Byzantine art in Europe is a subject to which for some years I have devoted a considerable portion of my leisure, and I selected Périgueux with the express object of continuing my researches into the Byzantine influences in early French work. So far as Saint-Front was concerned, the result was absolutely *nil*; not only is there no Byzantine feeling in the capitals, but there is even less than is found in other buildings of the twelfth century,

and, so far as earlier periods are concerned, the contrast is all the more striking; for, curious to note, notwithstanding the superabundance of Roman work found throughout the South of France, the artists of the end of the tenth century and nearly the whole of the eleventh century seemed to prefer the interlaced patterns and the V-section leaves of the Byzantine school.

Not only are the capitals of Saint-Front not Byzantine, either in design or execution, but they are advanced Romanesque of the twelfth century. On that point I should like to



FIG. 10.—CAPITALS, SAINT-FRONT.

On North Front.

quote the observations of the late Adolphe Berty, one of the most accomplished antiquaries of his time, to whom we owe the admirable drawings of the Baptistry of St. John at Poitiers, made before its restoration in 1854, and of numberless other churches of all periods, and who wrote the description of Saint-Front to accompany Viollet-Le-Duc's drawings in Gailhabaud's work. Berty, reviewing De Verneilh's statement that Saint-Front was anterior to the second half of the eleventh century, says:—"So far as we are concerned, it appears extremely improbable that such could be the case. That a church was built by Froterius and consecrated



"in 1047 is a fact of which there can be no doubt, because the historical evidence establishes it; but that this church should be the one we now see, with its Corinthian capitals and domes, we do not believe." "The ornamentation is, so far as we are able to judge, much superior in style to that which we are accustomed to find at the beginning of the eleventh century, and it betrays that influence of ancient monuments which, as we have often had occasion to remark, is much more felt in the twelfth than in the eleventh century."

I made several drawings of the capitals [fig. 10], both new and scraped. I also drew the ancient fragments in the cloister, and subsequently, passing through the South of France to Saint-Gilles and Arles, I found in the pure Romanesque detail of those churches of the twelfth

century the same influence of Roman work which at that period began, as Bertie says, to exert itself. There is one capital in particular, of which there are eight examples in



FIG. 11.—CAPITAL, ELNE.

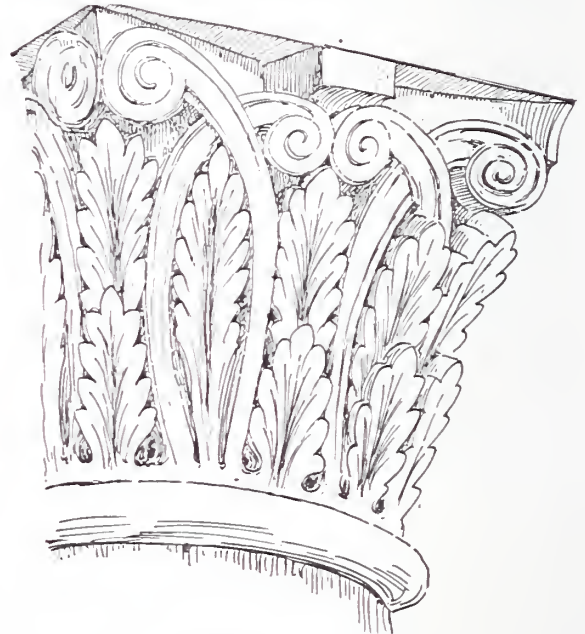


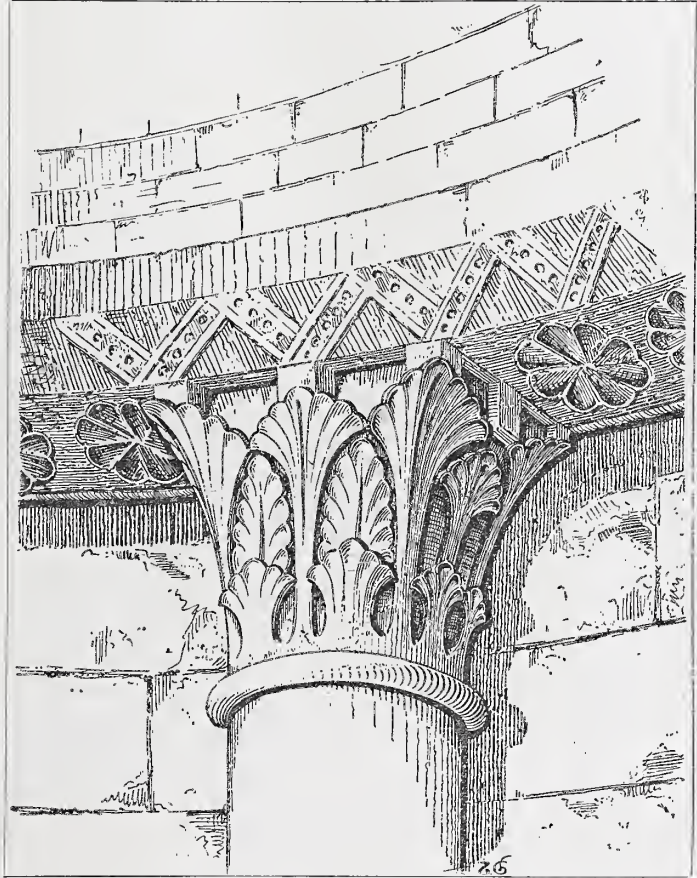
FIG. 12.—CAPITAL, SAINT-MICHEL D'ENTRAIGUES.

Saint-Front [see fig. 10], which, so far as the lower portion is concerned, is absolutely the same as some in the cloisters at Elne, also of the twelfth century; in fact, the same artist might have been brought over to carve them [fig. 11]. There is also a capital at Saint-Michel d'Entraigues [fig. 12] (dated 1137) which in design is similar to, in execution even earlier than, those of Saint-Front. In the apse of the same church the soffit of the architrave carried on shafts is carved with sunk coffers in imitation of Roman work [fig. 13], and the same decoration was found in a similar position in the apse of the south transept at Saint-Front [fig. 14, p. 250].

It necessarily follows that if the bays of the nave and aisles of the old church were not built till after the year 1030, the great tower erected on them, which was built at the same time as, and formed part of, the five-domed church, could not have been erected at the latter end of the tenth century, as asserted by De Verneilh. In the style and character of its detail it belongs to the same period as the five-domed church. In consequence of the enormous height to which the tower was subsequently carried, it was apparently found necessary to strengthen the tower walls, and openings in them have been filled in.

The logic shown in De Verneilh's description of its style is perplexing, and it is a most singular thing that it should have been accepted up to the present day by all French writers, including even Viollet-Le-Duc. As you are all doubtless aware, in front of the west end of St. Mark's at Venice stands the famous campanile. De Verneilh assumes that as the five-domed church of Saint-Front was copied from St. Mark's, so also the tower was copied, and was therefore Byzantine. But the campanile at Venice was built in 902—160 years before the domes of St. Mark's were built, so that he has no right to assume that it was copied, like the church, from a Byzantine model. There is, however, a still more cogent reason against his assumption—there was no bell-tower in Constantinople to copy. Later on in his work, De Verneilh, finding that there were no analogous bell-towers in the East, remarks that if the Byzantine architects had required such features, they could not have done better than copy the tower of Saint-Front. Finally, he winds up his description by saying "that the bell-tower of Saint-Front is the most ancient example in France, and, it may be said, the only Byzantine bell-tower in the world." But not only is the tower not Byzantine, either in its form or in any of its details, but it is in its design distinctly opposed to the principles of Byzantine art. The Byzantine artists never employed columns except for constructional purposes, and the Roman method of breaking up the surface of their walls with pilasters and semi-detached shafts with their capitals was never imitated by the Byzantine architects after they had freed themselves from the trammels of Roman art in the fifth and sixth centuries. The design of the tower is Romanesque, and its principle of decoration is copied from the superimposition of orders decorating the Roman amphitheatres, of which there still exist the remains of an important example in Périgueux itself.

To the west of this tower, and between it and the west front, are the remains of another structure, the date of which is unknown. It consists of four huge piers enclosing a square space, which, there is no doubt, was vaulted with a dome. This may either have been the first *motif* in the restoration of the old church after the fire, before a reproduction of the plan of St. Mark's was thought of, or it may subsequently have been added to form an entrance-porch to the new five-domed church; for in building the great tower they carefully preserved the



Drawn by T. Garratt.

FIG. 18.—CAPITAL AND ARCHITRAVE, SAINT-MICHEL D'ENTRAIGUES.



passage through, and the principal entrance seems always to have been through the old church.

Having now given my reasons for attributing a much later date to the erection of the five-domed church of Saint-Front, viz. subsequent to the great fire of 1120, a new task is imposed on me. There is no doubt that many large churches, such as those of Angoulême and Fontevault, were built in the beginning of the twelfth century, and consequently there must have been some other model for them, for it is not likely that such important structures would be the first attempts in that direction. This was the problem which puzzled me in



FIG. 11.—CAPITAL AND ARCHITRAVE, S.E. APSE, SAINT-FRONT.

1892; and it was only solved, in my mind at all events, last year, when I visited Périgord. The results of my researches are very different from what I had anticipated. It must be remembered that the supposed Byzantine origin of the domed churches in Périgord rests on two assumptions: (1) *That the five-domed church of Saint-Front was built between 984 and 1047, and was copied from St. Mark's, Venice, the latter being based on the church of the Holy Apostles in Constantinople, and therefore an Eastern importation.* (2) *That it was the five-domed church of Saint-Front which served as the model for all the domed structures in Périgord and the Charente* — though, curiously enough, as some archæologists have remarked, they never seem to have copied the plan; for Saint-Front is still the only domed church in France with the Greek cross for its plan. Transepts were added, as at Angoulême, in order to afford additional accommodation for altars, but the plan there is that of a Latin cross.

Now the conclusions I have come to are these:—

- (1) Domed churches were erected in Périgord early in the eleventh century.
- (2) The construction of their domes and pendentives is entirely different from that found in Byzantine structures,\* and is, so far as I can ascertain, indigenous to the country.

\* I might here point out that the Byzantine influence which was exerted in France and Germany from the sixth to the twelfth century is, with the exception of a few doorways and windows, *almost entirely confined to decorative sculpture.* (The brick courses in ancient French churches are of Roman origin.) In the construction of vaults and arches I

know of only one example in France, the dome of the chapel of Saint-Ferreol in the church of Saint-Honorat (île de Lérins), on the Mediterranean coast; and of two in Germany, viz. at Aix-la-Chapelle and in the small chapel of St. Bartholomew, situated about sixty yards to the south of the cathedral of Paderborn. Curiously enough, in the latter

(3) The plans of these early churches consisted always of a nave without aisles, and with one, two, or more domes, built in a line running east and west, but not always of the same size.

(4) The vaulting of these churches with domes is only a variation from the ordinary barrel-vaulting of the South of France, and was adopted because the builders thought they could be built with less material than those with barrel-vaults, which required thicker walls or other equivalents to meet the thrust throughout their whole length.

(5) The domes of Saint-Front were built in accordance with the tradition of the country, with pointed arches, winding pendentives, and ovoid cupolas, and the plan only of St. Mark's was copied with other features up to the springing of the arched structure.

If I am able to prove these conclusions, it follows that the theory of the direct Byzantine origin of these domes in France falls to the ground.

I think my best course now will be to take up the second of these conclusions, viz. the construction of the Périgord domes, the peculiar nature of which has never, so far as I know, been clearly explained. Viollet-Le-Duc's drawings are inexact, and his conclusions are not borne out by the facts. In justice to his memory I ought to say that, when he visited Périgueux for the second time (two years before his death), he told M. Lambert, the architect-inspector of the works, that he had misunderstood the structure, and he promised to correct his statements in the new edition he was preparing of his *Dictionnaire raisonné*. This was never published, as he died before it was completed.

Between the French dome and the Byzantine dome there seem to me to be six very important differences :—

(1) Pointed arch-vaults carry the French pendentive; circular arch-vaults the Byzantine.

(2) The earliest French pendentives and those of Saint-Front are set out on the intrados of the arch; the Byzantine pendentive is set out on the extrados.\*

(3) The pendentive in vertical section is a curve of double flexure in the French domes; in Byzantine domes it is part of a sphere.

(4) The earliest French pendentives are built in courses with a horizontal bed, and each course is horizontal. The Byzantine pendentive has sometimes horizontal and sometimes arched courses; the beds, however, are not horizontal, though they are not always normal to the curve.

(5) The French dome is set back behind the string-course which crowns the pendentive.†

(6) The French dome is ovoid, and not spherical.

1. The use of the pointed instead of the circular arch was probably first suggested on account of the tendency to sink, inherent in the crown of the latter. There was, however, a second reason which was pointed out by Fergusson forty years ago, viz. that as the French builders desired to protect their vaults externally by laying the roofing tiles direct on the vault, less dead weight was required on a pointed than on a circular vault. The same object probably dictated the choice of an ovoid instead of a spherical cupola. In St. Mark's at Venice and in the larger Byzantine examples the domes are covered with lead, which was laid direct on the dome or vault without any filling-in.

2, 3, and 4. The setting-out of the pendentive on the intrados instead of the extrados of

case, only the vaulting is Byzantine; the capitals are very early debased Romanesque, which show that masons, and not artists, were employed. The chroniclers of Charlemagne state that there are only two buildings in Germany on which Greek workmen were employed, viz. the tomb at Aix-la-Chapelle and the chapel at Paderborn, in the latter case "per grecos operarios" brought over by Archbishop Meinwerke in 1020.—R. P. S.

\* At least, primarily so, part of the voussoirs is occasionally buried in the pendentive, just as part of a rib is carried behind the web. In smaller domed vaults, such as in those of the aisles of St. Sophia at Constantinople, the rib is entirely buried in the cupola, and the vault rests on a skewback. The same construction is found in the chapel at Paderborn just referred to.—R. P. S.

† This remark refers to the great domes of Périgord only.



the arch is one of the most peculiar features of construction I have ever met with. I have searched diligently through M. Choisy's *L'Art de bâtir chez les Byzantins*, and I can find no example of large size which approaches it. Centering was provided for the main arches, but not for the pendentives; it was not required, because they were built in horizontal beds. It was

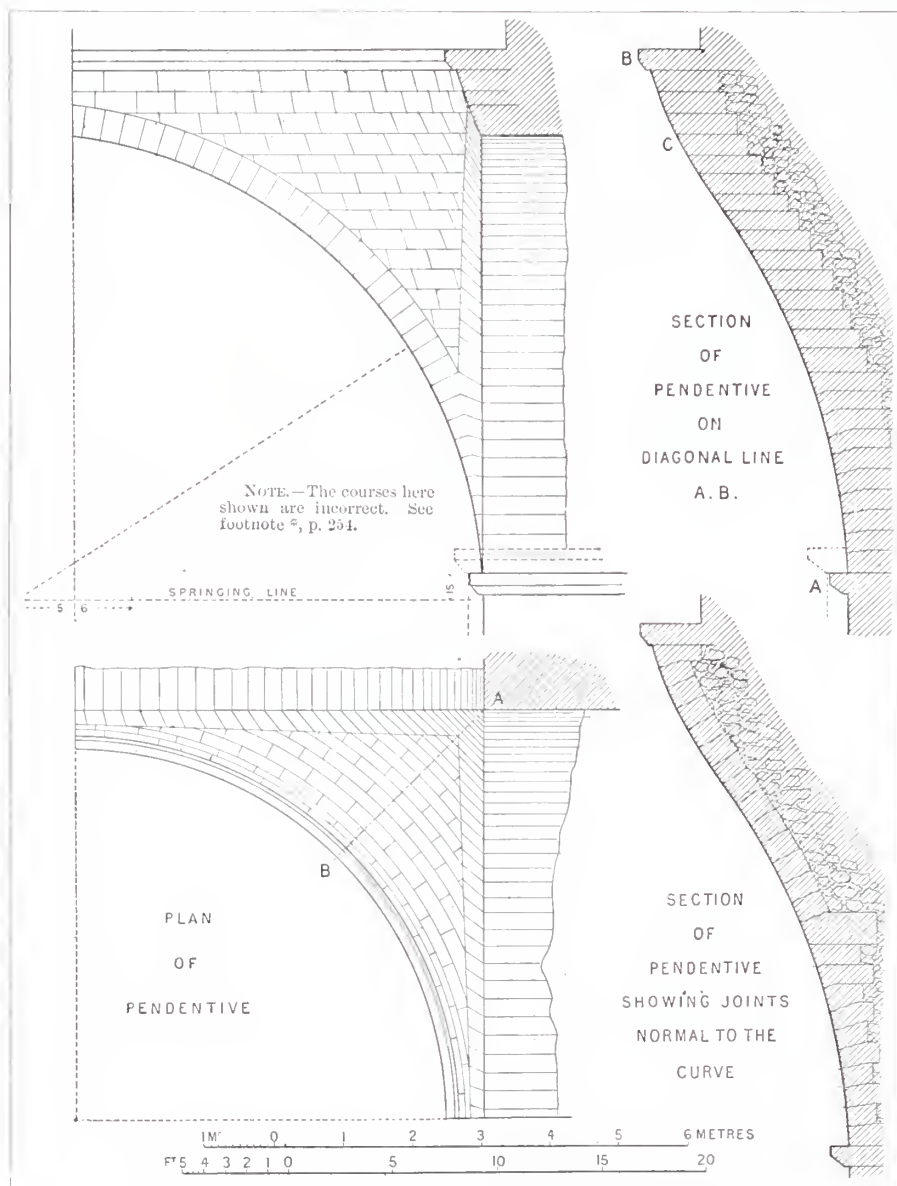


FIG. 15.—SAINT-FRONT, PÉRIGUEUX, PRIOR TO ITS RESTORATION.

of double curvature, the nature of the double curvature depending on the distance between the two centres of the pointed arch. In the first dome of St. Stephen's the distance is about 12 inches to 18 inches only, in the second 30 inches. In Saint-Front, before the restoration, I calculate it to be 5 feet 6 inches. The double curvature is much more marked in Saint-Front, therefore, than in St. Stephen's.

This accounts, however, only for the curve up to the soffit of the keystone; above that it

necessary, however, to set out a guide line for the curve of the pendentive proper, and of the voussoirs which in these French domes formed part of it. Whether it was found more convenient to provide a vertical or horizontal guide line I do not know; but, as every horizontal section through the pendentive was part of a circle, the centre of which was in the axis of the dome, the latter would probably have been found the simplest. There is no difficulty whatever in setting it out; the intrados of the two contiguous arches are the guides, and a curve struck at any level with the centre in the axis of the dome determines its extent. The vertical section through the diagonal of the pendentive gives a line

was left to the mason to determine at will. As a rule, the return curve was continued up to the string crowning the whole pendentive. In one of the domes of Saint-Front, however, viz. the western dome, there is a distinct bend outwards on a line with the apex of the voussoirs. This, I was informed by M. Lambert, existed in the original dome, and was set back [fig. 15] to obtain more light because of the tower on the west side. The height to which the pendentive is carried above the voussoirs of the arch varies in Saint-Front—one, two, or three courses being found.

I have already stated that in the original barrel-vaults of Saint-Front the springing of the pointed arches was about 15 inches below the impost moulding crowning the rectangular piers, and the pendentive commenced at the impost level. When the four central piers were enclosed in a casing, about 9 inches thick, the new impost was raised about 12 inches [fig. 15]. Apparently, therefore, the springing of the four arches carrying the central dome was 27 inches below the top of impost, and it was

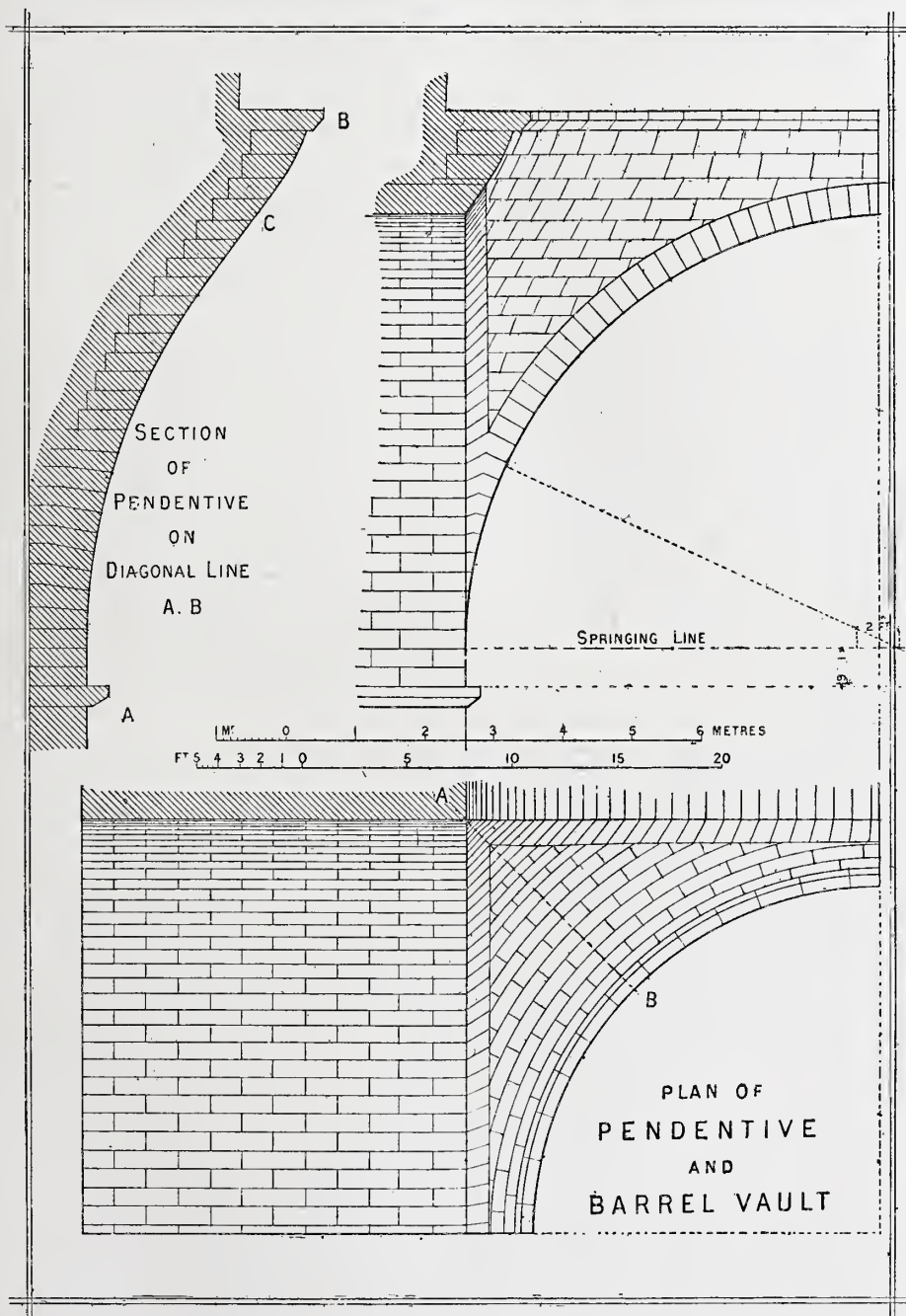


FIG. 16.—PENDENTIVE AND VAULT, SAINT-FRONT, AS RESTORED 1856-71.



this which increased the "debased" character attributed to it by Abadie. The lower eight voussoirs\* of the arch were all laid with horizontal beds, forming what is known as the *tas-de-charge* (horizontal pile) in French vaulting. The *tas de-charge*† is found in all the early domes, and varies from six to eight courses, according to the size of the dome. In the church of Saint-Front, as restored, there are only four courses with horizontal beds in the central and east dome above the springing, and five courses in the western dome. The distance between the centres of the pointed arch in the original church was (so far as I have been able to calculate it from drawings and illustrations made before the restoration) 5 feet 6 inches. In the restored church the distance is only 2 feet [fig. 16]; and as the soffit of the keystone has been rounded off, the arch has almost an elliptical curve. The curve of double flexure, therefore, is scarcely apparent in the new work.

The filling-in of the pendentive between the voussoirs begins above the tenth voussoir; above that, probably, the first three courses would be laid on horizontal beds. Above that, the beds of the pendentive of Saint-Front are either laid on horizontal beds or are normal to the curve. Those of St. Stephen and all early domes have horizontal beds. There were three pendentives with horizontal beds in Saint-Front—two in the east and one in the north—the others had their beds normal to the curve. I asked M. Lambert the reason for this, and he stated that apparently they found they could carry on the work quicker and with less material in the ashlar blocks with beds normal to the curve of the pendentive, provided the blocks in each curve were temporarily supported (for no centering was employed for the pendentives), and in the upper courses there were holes in the back of the stones which suggested that they had been suspended until the course was completed.‡

In the pendentives which I have just described, as the arch forms part of the pendentive and the curve is carried up above the extrados of the arch, it follows that the voussoirs at the apex lean over towards the centre. For some reason or other this did not appeal always to the taste of the masons or of their directors, and in the second dome of St. Stephen's we find another method. The voussoirs at the apex are kept vertical, the lower portion still forming part of the pendentive. This gave a peculiar winding line to the extrados of the arch, which was far from pleasing, and it seems to have troubled the masons more than the setting-out of the first system, to judge by the irregular construction. It was nevertheless employed from time to time even in the Charente domes. The third method would be to make both apex and springing in a vertical plane, in which case we return to the ordinary method of carrying pendentives, viz. on the extrados of the arch, excepting, of course, that in France the arches were always pointed. They do not seem, however, to have liked the junction of the curve of the pendentive and the vertical face of the arch, so that in Roulet and Rioux-Martin they carry a hood-mould at the intersection. I ought perhaps here to state that in the course of the development of the style an additional rib or order was provided under the main arches, and this is found in all the Charente churches, except in the west dome of Angoulême. We see in the Charente a fusion between the systems employed in the barrel-vaulted churches and in the early domed churches, in order to get rid of the enormous piers in the latter. The architect of Saint-Front seems to have steered between the two: he adopted the simple arch-vaults and great piers of the first dome of St. Stephen's, but he lightened and gave greater elegance to his piers by forming openings in them, in imitation of those of St. Mark's, Venice.

\* The eight beds of the lower voussoirs are incorrectly shown in the diagram [fig. 15], both in elevation and section; up to a height of about 7 feet (D), or one-third of the height of the arch, the courses are all laid with horizontal beds, and this is the proportion generally followed for the *tas-de-charge* in French vaults. The reverse curve commences about 3 feet below C, the level of soffit of key-

stone.—R. P. S.

† Indicated by dotted lines on the diagram [fig. 15].

‡ I contributed an article some years ago to THE R.I.B.A. JOURNAL, Vol. IV. N.S. pp. 256, 282, in which I pointed out that in Persia down to the present day they build their stalactite vaults in this way, the source of my information being Mr. Purdon Clarke.—R. P. S.

5 and 6. The domes in Périgord are set back distances varying from 18 inches to 3 feet behind the string crowning the pendentives. In the East the dome or lantern is either a part of the same sphere as the pendentive, as in the cupolas of the Golden Gate at Jerusalem; is raised, being struck from a higher centre, as in St. Sophia, Constantinople; or surmounts a drum; in all cases there is no setting-back.\* In Saint-Front, as rebuilt, the dome is ovoid, and from the nature of its covering must always have been so. It has, however, I think, been raised, and the lower courses up to the level of the cornice of the lantern outside are all built with horizontal beds. All the early domes were built with centres, with stones of small dimensions and with their soffits plastered. The imprint of the planks which formed the centering is still visible in St. Stephen's, and it is clearly described in De Verneilh as existing in Saint-Front before restoration; the cupolas now are all built in ashlar in 9-inch courses.

I have now to return to the first of my conclusions, relative to the existence of domed churches early in the eleventh century.

The earliest dome in France I am acquainted with is found in the church of Germigny-les-Prés, already alluded to, built in 806. The north and south-east bays of the aisles, measuring about 7 feet 4 inches square, are covered with cupolas resting on squinches. The lower portion of the tower of Brantôme, near Périgueux, is vaulted with a dome so original in its construction, and so unhesitating in its execution, that it must have been the result of many previous trials [figs. 17, 18, 19]. The upper portion of the tower (very remarkable in its design) dates from the eleventh century, but the masonry of the substructure suggests an earlier period. It is built over an oratory much more ancient in its foundation, and may therefore possibly have been erected in the tenth century. In the centre of each side of the square chamber within the tower projects a pier; from pier to pier arches are thrown, which in plan form a circle. Above these arches is carried an ovoid dome, the lower courses of which have probably a horizontal bed, as the upper portion is built in spiral courses.† The soffit of the arched vault is built with ordinary intersecting barrel-vaults.

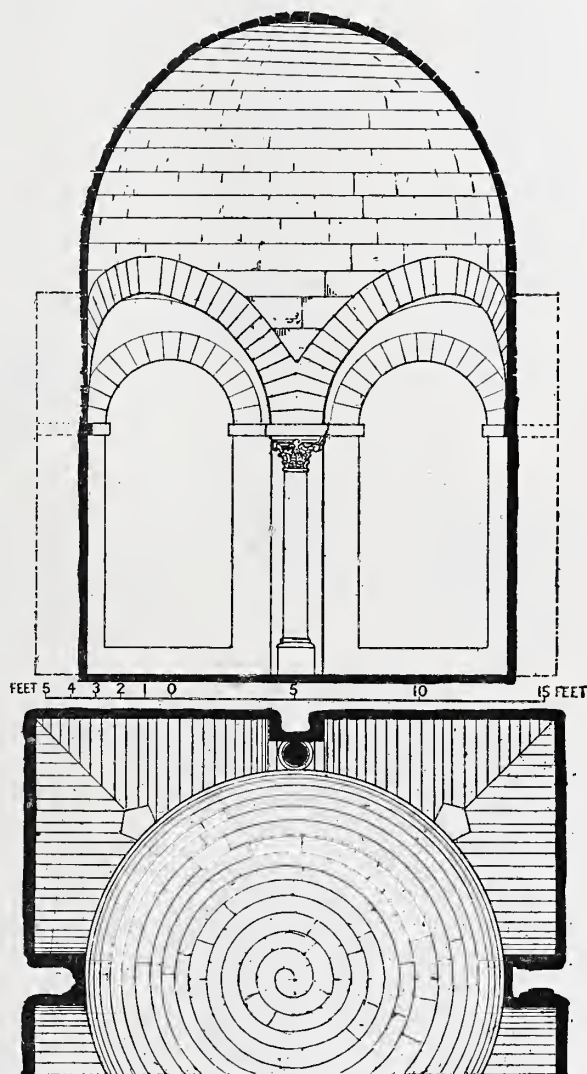


FIG. 17.—PLAN AND SECTION OF CHAMBER IN TOWER, BRANTÔME.

\* There is one exception to be made, however; the first dome of St. Stephen's is not set back. There is not sufficient of it left to decide whether it was ovoid or not.—R. P. S.

† The dome of San Vitale is built in spiral courses, neces-

sitated by the nature of the construction, which consists of earthen pots used for the sake of their lightness, and the foot of one pot is fixed in the mouth of the pot preceding it. Here, in Brantôme, I imagine the spiral form was adopted to dispense with centering.—R. P. S.



Whatever the date may be, it suggests at all events that the erection of domes was not at that time unknown in the South of France. Three of the piers had originally an ancient column and capital in front: of these only one remains.

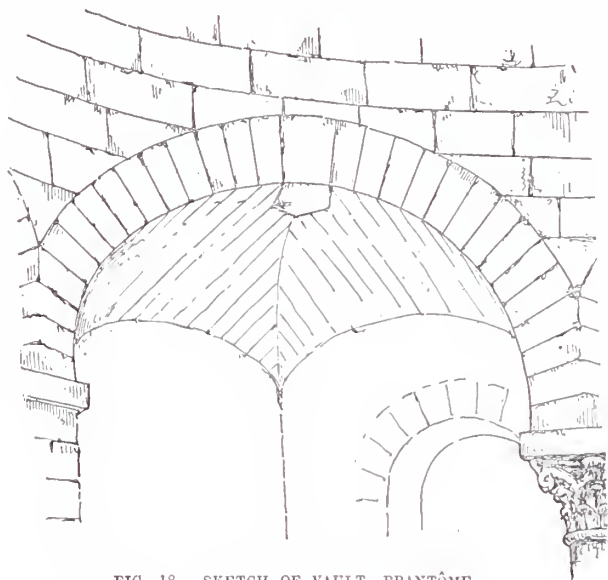


FIG. 18.—SKETCH OF VAULT, BRANTÔME.

There is another dome at Saint-Martin, Angers, which forms part of the rebuilding in 1020 of the church founded by Hermengarde in 819. It is a portion of a perfect sphere, and the lower part of it, viz. that which is known as the pendentive, is set out on the intrados of the arch—this time a circular arch. The date of this dome (1020) is later than those I have mentioned; but it proves that domes, even in Anjou, were not unknown, and the perfection of its construction suggests that it was by no means a first attempt.

The first domed church actually dated is that of Saint-Astier, nine miles distant from Périgueux [fig. 20]. The domes no longer exist, but the immense piers in the interior, similar to those of St. Stephen's, Périgueux, leave no doubt as to their having been erected to carry domes. The church was commenced early in the eleventh century, and dedicated in 1013. The dome of the first compartment was replaced by a ribbed vault in the thirteenth or fourteenth century. It may have been built on circular arches. The second

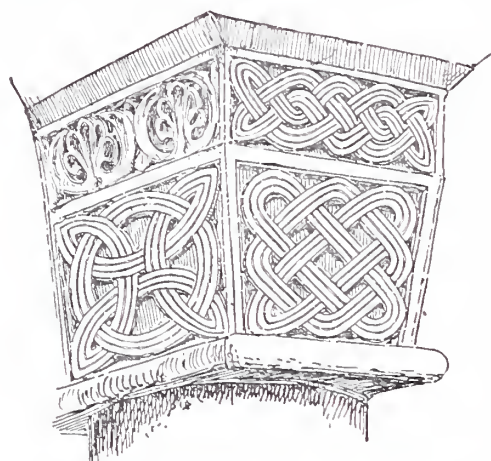


FIG. 19.—CAPITAL IN BELFRY, BRANTÔME.

dome was raised on pointed arched vaults, and the upper part of the south wall still exists under the roof, with the chase 6 inches deep, into which the pointed barrel-vault was built in. I am inclined to the opinion that the first church, dedicated in 1013, had only one dome, and perhaps a porch or narthex, which may have had a tower over it. If this surmise be correct, it follows that the custom which prevailed afterwards of having a series of domes originated in the desire to increase the size of the church. The second dome was replaced by a barrel-vault, I think, in the seventeenth century.

The church of St. Stephen, Périgueux, is the second example: it was commenced in 1013, and dedicated in 1047 as the cathedral of Périgueux, on the same day as Saint-Front. Of the western dome

only a fragment remains, sufficient, however, to determine its dimensions and design\* [fig. 21]. The second dome is still intact. Here, again, the fact that the latter is larger than the first,

\* It should be noted here that in the elevation given of the fragment of the west pendentive [fig. 21] the appearance of the arch is semicircular, and its height being less than half the width, the centre would be below the impost moulding; but as a matter of fact the centre voussoirs have sunk, owing probably to an attempt to cut off their

projecting portions. Inside, however, the arch is pointed, the distance between the centres being about 15 to 18 inches, and their level about 12 inches below the impost moulding. Owing also to the great weight of the superimposed wall, the haunches have risen slightly, which makes it difficult to determine the exact original form of the arch.

and not quite in the same axis [see fig. 9], suggests that one domed bay only was contemplated in 1014; but as the basilican church of Saint-Front increased in size, a second bay with dome was added to the first one of St. Stephen's, in order to rival the twin church. Towards the end of the twelfth century a third dome of advanced style and greater elevation was added. A bell-tower of considerable size is shown in Belleforest's *Cosmographie Universelle*, 1575: this stood on the west side of the first dome mentioned. It is of similar design to that of Saint-Front, but without the pilasters and semi-detached shafts. Instead of the cupola lantern, it is crowned with a spire with marked entasis, pierced with small openings.

A third church, that of Saint-Silain, existed at Périgueux, but was destroyed during the Revolution: it is not actually known whether it had domes or not. It was 100 feet long by 57 feet wide, which would allow only of two domes; but it may have been a basilican church like Saint-Front.

The church at Brantôme, contiguous to and on the east side of the tower before referred to, was built between 1050 and 1080. According to De Verneilh, who saw the building before it was restored, or rather rebuilt, by Abadie, it had two domes, the western dome, contrary to the custom, being the larger. All the masonry is now absolutely new, inside and outside; but although I could distinguish where the domes might have been, and could recognise that the plan of the church had been governed by the foundations, I am not able to give any further evidence.

The church of Saint-Jean-de-Cole was built about 1086. It has only one dome, but larger than any of its predecessors, being 46 feet in diameter.

The church of Saint-Avit-Sénieur dates probably from the end of the eleventh century. It consists of a nave which was vaulted with three domes in succession, the eastern dome being probably the first built, on account of the size of its piers. The domes and pendentives exist no longer, having been replaced in the thirteenth century by ribbed and barrel vaults, built on the old piers, which still remain intact.

Then we have a series of smaller churches, with domes varying from 16 to 21 feet in diameter:—Tremolac, in the form of a Latin cross, with three domes over the nave and one over the crossing; Bourdeille, with three domes and an apse; Peaussac, with three domes; and Le-Vieux-Mareuil, with three domes and a square apse. All of these

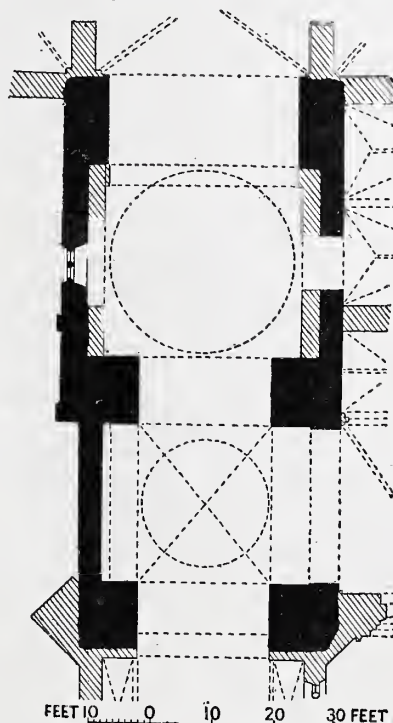


FIG. 20.—SAINT-ASTIER.

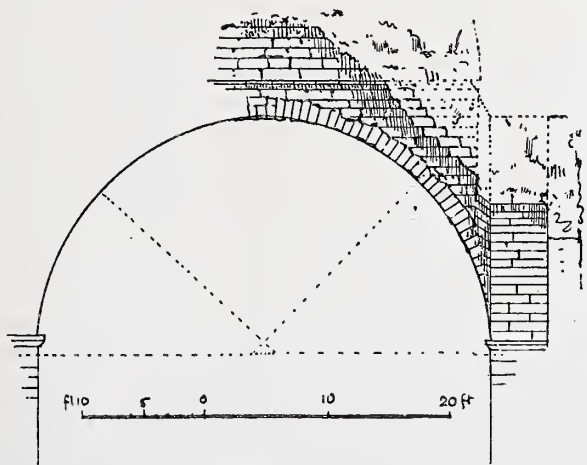


FIG. 21.—ELEVATION OF PENDENTIVE, ST. STEPHEN'S, PÉRIGUEUX.

A pointed arch, however, the height of which above the impost is less than half the width, must have its centres below the impost, unless there were four centres; this, however, would not accord with what remains of the

pendentive on the south-west side. The elevation of this arch has been worked out from a large photograph by M. Robert, the photographer to the Bureau des Monuments Historiques.—R. P. S.



examples show the gradual fusion between the domed churches and those with barrel-vaults. The huge piers of Saint-Astier and St. Stephen disappear, their places being taken by external and internal buttresses; that is to say, the thrust of the main transverse arches is brought well within the walls by piers, with arches thrown longitudinally from pier to pier. The small size of the domes doubtless enabled the builders to adopt this system in place of the huge piers; but Saint-Avit-Sénieur, with its two western domes 38 feet in diameter, already shows the change. Owing possibly to the diminution of the piers, in this instance the domes fell down in the thirteenth century. Of Saint-Amand-de-Colly I have no plan, and can find no description. There would seem to have been only one dome over the crossing; its pendentive belongs to the first method, and, owing to the fact that the arches carrying it are more than usually pointed, the double curvature of the pendentive is very marked.

In the parish church of Saint-Emilion (Gironde) the second and third bays of the nave are covered with domes, which still exist in fair preservation. The pendentives belong to the first method, but the upper voussoirs lean over only to a slight extent.

Of churches with large domes, the churches of Cahors and Souillac, both on the south-east of Périgueux, are of early date, judging from their plan. Cahors was consecrated in 1119. It consists of two large domes fifty feet in diameter, and a semicircular choir, with three apses of later date. Souillac has the plan of a Latin cross, with two domes over the nave, one over the crossing, barrel-vaults over the transepts, and a semicircular choir with three apses, two other apses with polygonal external walls being on each side of the transepts. This church, as also that of Solignac, near Limoges, retains the simple piers of the older type of church, though the latter was not consecrated till 1143. The pendentives of Solignac belong to the third method, that is to say, the arches lie in vertical planes. This result, however, is obtained by having four independent pendentives in the angles, each with a radius about three-fourths of the usual dome radius. The horizontal plan of the upper portion of the pendentive consists of four circular angles joined by straight lines over the top of the arch voussoirs. The cupola carried above follows the same irregular curve.

Early in the twelfth century a new feature is introduced, viz. the addition of an extra rib under the principal arches, forming a second order; this rib being universally carried on coupled shafts with Romanesque capitals. The first introduction of this rib would seem to have been made in Fontevrault, commenced in 1101, and consecrated (so far as the nave with its four domes is concerned) in 1119. The domes are gone, but the piers and foundations still remain as evidence of their existence. Whether the setting-out of the pendentive is based on the first, second, or third method I do not know. De Verneilh gives a section, but as he never seemed to recognise any distinction between them, and always indicates the third method, even in Saint-Front and St. Stephen's, which we know to be wrong, his sections cannot be depended upon.

Now all the early domes, viz. those in the churches of St. Stephen, Périgueux, Saint-Jean-de-Cole, Saint-Avit-Sénieur, Cahors, Souillac, and Solignac, are all coated with plaster so far as their pendentives are concerned. Whether that was due to the fact that their construction was of a primitive and tentative character, such as we see in St. Stephen, I do not know. When we come to the domed churches of the twelfth century we find that they are all executed, so far as the main barrel-vaults and pendentives are concerned, in ashlar masonry. The tradition of a century enabled the builders to set out their work with precision, and there was no longer any need to mark the irregularities of the masonry with a coat of plaster.\* The cathedral of Angoulême was rebuilt more or less by Abadie. Ashlar

\* I have not seen Fontevrault, and from the fact that the nave is used as a prison, neither Parker nor Petit was able to get access to it.—R. P. S.

masonry, however, is shown in Thomas Allom's drawing made in 1846; and the setting-out of voussoirs and pendentives belongs to the first method.

There seems to be some difference of opinion about the actual date of the western dome of Angoulême Cathedral. De Verneilh claims it as built in 1017 in imitation of Saint-Front. Sharpe, Parker, and Petit state that it was rebuilt in 1130, with the other portions of the nave. There is no doubt, however, that the west dome partakes of the earlier character of the plan, and the size of its piers proportionally accords best with those of Saint-Avit-Sénieur. I should be inclined, therefore, to ascribe its erection to 1120, when they began to

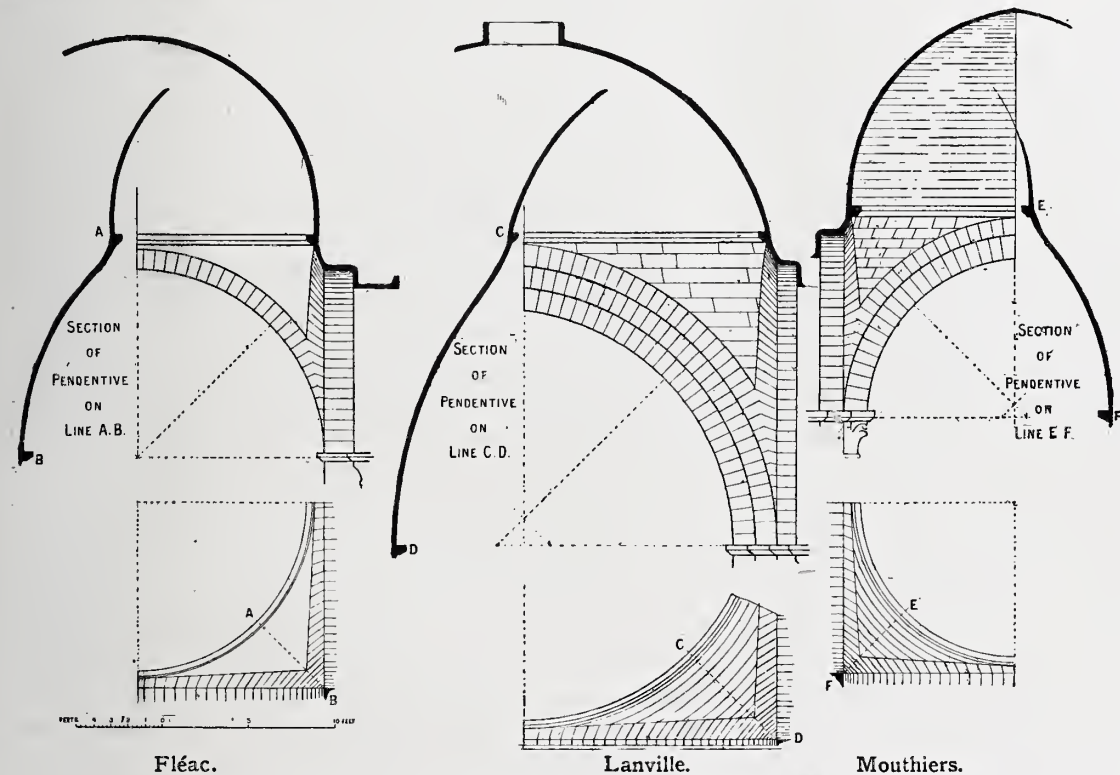


FIG. 22.—THE LA CHARENTE PENDENTIVES. (From measurements by Mr. T. Garratt.)

rebuild the church.\* The other bays all have the extra rib and coupled shafts which mark the transition from the earlier to the later development.

According to De Verneilh, the third dome of St. Stephen's was rebuilt in the second half of the twelfth century. Here the extra rib is found, and the whole is constructed in ashlar masonry. The domed churches of the Charente have been so fully illustrated in the Sharpe Memorial that it is not necessary for me to do more than refer to that work. The churches were all built in the twelfth century, and therefore possess the extra rib. With the exception of Angoulême this rib is carried on a single shaft, and not on double shafts. Domes and barrel-vaults are employed indiscriminately, as also the three methods of setting out the pendentives. Thus in Fléac,† Lanville, Mouthiers [fig. 22], and in the second and third

\* It is possible that it is this western dome which constituted the original church, and the design of which they desired to preserve.—R. P. S.

† It is interesting to note that in Fléac the domes are carried on circular arches. Up to the level of the intrados of the keystone, therefore, the pendentive forms part of a sphere; above that, there is a curve back which

suggests that in all those domes where the cupola above starts from the same line as the upper part of the pendentive they decided to continue the curve. Thus in the early dome of St. Stephen's, and the three domes of Charente—viz. Fléac, Mouthiers, and Lanville [fig. 22]—the curve is continued. This is never found in Byzantine domes.—R. P. S.



domes of Angoulême, the first method is adopted; in Gensac, Châtres, and Roulet, and possibly in the west dome of Angoulême, the second method; and in Trois-Palis, Saint-Quentin, Berneuil, Bourg-Charente, Saint-Amand-de-Boixe, and Plassac, the third method.

The cathedral of Angoulême was consecrated in 1130. Consequently, if the date which I ascribe to the five-domed church of Saint-Front—viz. after the great fire of 1120—be correct, it follows that whilst the former was being completed, the latter may have been rising from the ashes of the old church. A comparison of the sculptured ornament at Angoulême [see an example from the west front, in the headpiece p. 233] with that of Saint-Front would suggest even a later date for the latter. At Angoulême the details are much more influenced by Byzantine work. The nearest approach in the style of ornament which I find to that of La Charente is a capital in Saint-Michel d'Entraigues (1137) [fig. 13], and this is pure Romanesque work of similar character, *though earlier* than the work in Saint-Front.

The execution of the ashlar work in Angoulême and Saint-Front would seem to have been of the same quality, but in the design of the former we find the extra rib which was not employed in the latter. There is no doubt that in the absence of this rib which marked the development of the style in the twelfth century, and in the return to the huge square pier which characterised the domed churches of the eleventh century, we find two of the reasons which have inclined the advocates of the early date for Saint-Front to accept De Verneilh's theory. I have already pointed out, however, that in Solignac and Souillac, consecrated in 1143, the same characteristic existed, and we have also to take into account two important factors—first, the absolute *dissemblance* between the plans of Saint-Front and those of all the churches I have described, and numberless others in La Charente the plans of which are published in the Sharpe Memorial; and, secondly, the extraordinary *resemblance* in plan, design, and dimensions between the five-domed churches of Saint-Front and of St. Mark's, Venice. These are described in such detail by De Verneilh that there is no necessity for my entering further into them. There does not seem to me to be any doubt that the master-mason of Saint-Front went to Venice, measured the church of St. Mark's, and reproduced it, so far as the plan and general design were concerned. When it came to the execution of the pendentives and the domes, there was no reason to copy those; for more than a century domes had been built in France in a manner peculiar to the French masons, and if they returned to the early method of constructing pendentives as shown in St. Stephen's, and to the square piers, it was because they accorded better with the treatment of the walls as adopted in St. Mark's; they also lightened the piers by forming openings in them as in the same church. In the execution of the decorative work in the capitals, corbels, &c., the Romanesque style being already fully developed in the South of France at that period, there was no necessity to bring over Byzantine artists to assist them in that direction. In fact, so high a value did they place on the artistic qualities of their own French sculptors that they seem to have avoided any of that distinct Byzantine influence—influence of that second period which is found in other French buildings, and notably through La Charente up to the close of the twelfth century. It is only necessary to look at the work of Angoulême, Saint-Amand-de-Boixe, Lanville, Roulet, Mouthiers, and other places to find that interlaced work and that V-section of leaves which suggest the lingering tradition of Byzantine influence; and, by comparing it with the capitals, corbels, &c., of Saint-Front, to recognise at once that in the latter there is an entire absence of the same feeling, notwithstanding the singular fact that St. Mark's was the original model on which it was based.

It was in fact this negative quality in Saint-Front which first led to my doubts about the date of the five-domed church. De Verneilh's book, and the Byzantine feeling shown at all events in the beautiful engravings which illustrate it, led me to suppose that in Saint-Front and the early churches of the Périgord I should find the more remarkable examples of the style.

The evidence of the buildings themselves turned absolutely in the other direction, and so far from their being anything Byzantine either in the domed churches or in their decoration, they alone among all French buildings of the eleventh and twelfth centuries contain nothing of the style about them. The French builders of the South of France have always had the credit of being the originators of the barrel-vault, with its stone or tile roof, absolutely incombustible, lying direct on the vault; to them also I contend now we owe the development of the dome, with its pendentives set out in a manner peculiar to themselves, and in no way corresponding to those found in the East.

I have appended herewith a suggested restoration [fig. 23] of the old church for two reasons: first, to show that a considerable portion of it still exists; and secondly, to point out where, in my opinion, the old bell-tower was placed; because, having suggested in my Paper that the existing tower was not built till the twelfth century, over two bays of a nave built in the eleventh century, I am bound to show where the original tower containing the bells melted in the great fire might have been placed.

The confessionals, A and B, exist still, as also the room over B. The room over A has been removed, displaying the richly decorated south wall, which has been restored, and is now an external feature. The aisle walls, west front, and porch all still exist, parts of the latter being hid in the houses overlooking the market-place. The six piers of nave are now embedded in the tower. They are carefully described in De Verneilh's work, and I gathered from M. Lambert that in the restoration of the tower they were substantially as De Verneilh had described them. The responds of the pilasters on the north and south walls of the aisle gave me the position of the other piers of the nave, and I have assumed that the narrow bay was vaulted with an arch turned in the other direction, over the aisles, so as to resist the pressure of the series of barrel-vaults thrown across the aisles, and at right angles to the nave. A similar requirement at the east end of the nave has suggested another narrow bay. This leaves room for a transept running between the two confessionals of the same width as the nave, and on the crossing I place the bell-tower, this being a position often found in early churches. I may instance the churches of Germigny-les Près and Saint-Martin at Angers (819), both already referred to; Louans, in Touraine (1020); Querqueville and Saint-Saturnin, in Normandy, of the ninth and tenth centuries; and of later date, Saint-Savin, Cluny, and Tournus.

The triple apse is found in Sainte-Généroux (Deux-Sèvres), ninth century; Langeais, in Touraine; and in many churches in Italy from the end of the ninth century, so that it was a well-known and recognised feature. These apses at Saint-Front are said to have been built by Eyna, Countess of Périgord, in or about the year 1003. As will be seen on referring

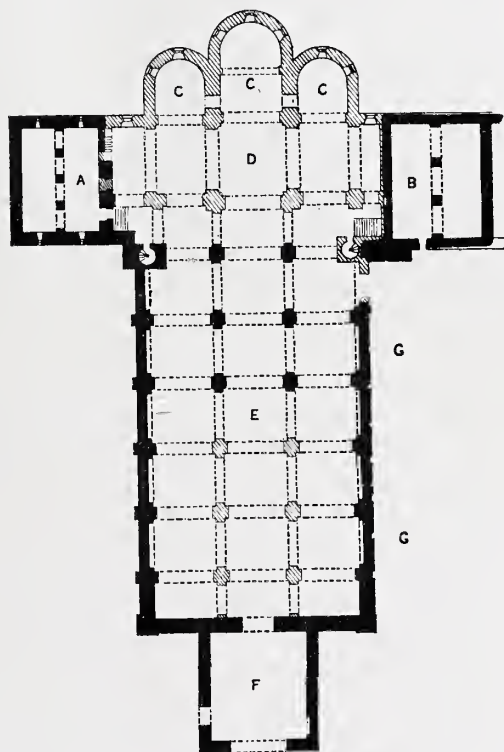


FIG. 23. — RESTORED PLAN OF THE "VIEILLE ÉGLISE," SAINT-FRONT.

A B, Confessionals. C, Apses. D, Tower. E, Nave. F, Porch.  
G, Cloisters.



to the plan of the existing building, all the east end of the Latin chancel, as shown in the restoration, was taken down when the western dome was built, so that no traces of it have ever been found. I was informed by M. Lambert that originally the whole floor under the western dome was about three feet higher than the present level, which would suggest that for some religious reasons they preserved the floor of the old church—the five-domed church standing on a lower level. This pavement was lowered in 1580 by François de Bourdeille, Bishop of Périgueux, so that all traces of the original foundations were then removed.

In conclusion, it is known that the nave was covered by a timber roof; I have assumed that the transept would have a similar roof, and under the belfry, as in Germigny-les-Près, there might only have been a timber floor, so that it can well be understood that in the great and sudden conflagration of such a structure the bells in the tower might easily be melted.

I should not like to close this Paper without expressing my warmest thanks to M. Lambert, the architect-inspector of the works at Saint-Front. Already in 1893 he was kind enough to send me valuable information; and last year, when in Périgueux, he allowed me to visit the church in all its parts; since then also I have, I am afraid, made his life a misery with my continual questions. My only regret is that the conclusions at which I have arrived as regards the date of Saint-Front are diametrically opposed to his own. I have also to express my thanks to M. Paul Bœswilwald for a tracing, with dimensions, of the domes and pendentives as reconstructed by Abadie, and for other information. I am indebted also to the late Edmund Sharpe for the two illustrations of the exterior and interior of Saint-Front [pp. 238, 239], taken from his own drawings, and made to illustrate his well-known lecture on the domed churches of La Charente, delivered in 1876.

#### DISCUSSION OF MR. PHENÈ SPIERS'S PAPER.

THE PRESIDENT said that all present must have shared with Mr. Spiers the great pleasure he must have had in going over the ground which he himself had had the pleasure of traversing with him some twenty-one years ago, under the best possible guidance of the late Edmund Sharpe. Mr. Spiers had imparted his views to them with the greatest industry of research and perspicuity of argument. There were one or two other members of the expedition present who would perhaps favour them with a few observations on the subject.

MR. J. S. QUILTER [*F.*] thanked Mr. Spiers for the able way in which he had presented the matter to them, although perhaps they could not all agree with his deductions. He was sorry he did not refer to Edmund Sharpe's opinions with reference to the pendentives; it was a subject that Mr. Sharpe very fully discussed at the time, and in a book on La Charente which was published to his memory. There were still copies of that book in hand, and there was one in the Library. He did not see why Mr. Spiers objected to the expression of one of the French architects, that it was a dome on a dome; it was the lower dome that formed the pendentives starting from the square base, and at a certain point became circular, on which the other dome was started.

These were points, however, that involved a great deal of difference of opinion, and he would not enter into them at that late hour. He would conclude by proposing a most cordial vote of thanks to Mr. Spiers.

MR. H. L. FLORENCE [*F.*] seconded the vote of thanks, and said that, to his great sorrow, he had not been fortunate enough to accompany the memorable expedition referred to by the President. He had listened with great interest to Mr. Spiers's Paper, which, with its numerous illustrations and technical points, was somewhat difficult to follow closely. One lesson, however, might be learned from it—not to take everything that one saw, even if it were measured and drawn, for granted. It was evident that many books and publications to which they had pinned their faith for the last quarter of a century, looked at in the newer lights and with the further knowledge gained since that time, would very possibly lead to such very different conclusions as those at which Mr. Spiers had arrived by his careful study. Therefore it showed them that their work was not yet done; they were not to rest content though a building had been already measured, illustrated, printed, brought out, and criticised. More careful study and observation, with the knowledge gained from the study of other build-

ings, would probably show that there were many points in a building which had already been measured which might give new information.

THE PRESIDENT, in putting the vote of thanks to the Meeting, remarked that the members of the expedition had been much struck with the very peculiar construction of the pendentives, being, as Mr. Spiers had told them, formed on the intrados instead of the extrados of their circles. His view as to the probable later date of Saint-Front than what was generally supposed, and what was taken for granted on the authority mainly of De Verneilh, was extremely interesting, and he thought Mr. Spiers had proved his point from a comparison of the rough work upon St. Stephen's of Périgueux with that of Saint-Front. It seemed extremely probable that the introduction of the pointed arch into Europe was owing to those domed churches, from finding that the central points of the round arches when loaded were accustomed to fall in, so that the pointed arch was almost a necessity to carry those domes. Of course, the pointed arch, as the late Lord Leighton had pointed out in his admirable addresses to students, did not give them Gothic architecture; but it was most probable that the development of the ribbed vaulted roofs gave them the true Gothic architecture; and the pointed arch was ready to their hand as derived from the supports of those domes. That was an admirable step, he thought, in the history of their art.

MR. R. PHENÉ SPIERS [F.], F.S.A., in answer to Mr. Quilter, said he was very well acquainted with the descriptions given in the Sharpe Memorial, and if Mr. Quilter would quote what he had failed to read correctly, he would try to answer it. The principal point that Mr. Sharpe was not acquainted with was what he (Mr. Spiers) had been trying to lay before the Meeting—viz., that the five-domed church of Saint-Front was not built at the beginning of the eleventh century, still less at the end of the tenth. Of course, De Verneilh's difficulty was this: his object was to prove that Saint-Front was the first domed church built in France. But as Saint-Astier was commenced in 1002, it was necessary to put back Saint-Front to the end of the tenth century, which would be quite impossible, owing to the perfection of the ashlar masonry and the style of the capitals. As the "old church" of Saint-Front was hidden behind houses then inhabited, Mr. Sharpe had not the opportunity that he (Mr. Spiers) had of seeing and examining its design and construction. If he had been able to prove to the Meeting that this so-called Latin church was

really eleventh-century work, then the five-domed church might be carried forward to any time; it might not have been begun for many years after the fire, and there were records that the bodies of the saints were not brought back till 1171, so that, instead of being the first domed church built in France, it was really the last of any size. Those were the new points. Then there was the question of the setting-out of the pendentive on the intrados instead of the extrados. De Verneilh spent ten years, more or less, in measuring the building which he saw every day; but, unfortunately, not being an architect, he failed to observe during the whole of the ten years the leaning over of the voussours at the top, and represented them in his illustrations as vertical. Now, their friends who went to La Charente in 1875 and measured many of the pendentives noted at once this exceptional leaning over of the voussours, and the winding forms of the pendentive. Mr. Garratt's outlines, set out on the spot to note thereon the dimensions, showed that at the first glance he had grasped the peculiar construction. In other words, Mr. Garratt saw in five minutes what De Verneilh failed to recognise in ten years. It was possible that the subject might excite more interest in France. Whether the theories put forward would be acceptable to the French archæologists he did not know. They greatly objected to being told that in Saint-Front the early builders had copied St. Mark's at Venice, and always claimed that the church at Constantinople was copied; they might possibly, therefore, be willing to agree that in the construction of their domes they originated a new and remarkable conception.

\* \* \* Mr. Spiers has since written:—Mr. Quilter writes to me to say that his remarks were intended to refer to Mr. Sharpe's lecture delivered in 1876, and not to the Sharpe Memorial volume. But an epitome of the lecture was given in the Sharpe Memorial, and the lecture itself, being delivered orally, was only partly reported. I recollect the lecture, and I have no doubt that the conclusions I arrived at as regards the double curvature of the pendentives in Saint-Front, which I noted on my first visit in 1875, were materially advanced by what Mr. Sharpe said. He visited the church in 1834 or 1835, and made a drawing of the interior with a camera lucida, from which the illustration, fig. 3, is taken; but I am not aware that he ever published any geometrical diagrams showing the setting-out of the pendentives.







9, CONDUIT STREET, LONDON, W., 20 February 1896.

## LORD LEIGHTON, P.R.A.

### Some Reminiscences.

I was introduced to Frederic Leighton at Rome, shortly after the Holy Week of 1853, by the late George H. Mason. He was then a light-haired, handsome, dashing young fellow of twenty-two, with fine manners, who let the most brilliant as well as the wisest sayings fall from his lips in his sprightly and animated conversation; in those days he was so gay and light-hearted that when at friends' studios he would often break off his conversation to sing a snatch of an Italian ballad or an air from the opera, and sketch comic idyls in charecoal on their canvases. Out-of-doors he was always dressed in the fashion, even in hot weather, not like the Bohemian students, in brown holland with their coats over their shoulders. He was not only adored but revered by Mason, who asked me if there were any painter equal to him in England. I left shortly after the Holy Week for Naples, but returned before the "Cerbera," or artists' carnival, and used to frequent Leighton's studio, and read bits of Tom Taylor's life of Haydon to him while he was at work. The finished design for "The Procession of Cimabue's Picture" was already made on a small scale in pencil, and an oil sketch of the colour, and Leighton was making the studies for the figures and drapery. One morning when I was there his model had failed him, and after examining my arms, he asked me if I would put on the silk sleeves of Cimabue for him to draw the folds.

An organised visit of the fashionable English dilettanti was made to Leighton's studio to see his composition of the "Cimabue," and after seeing it they adjourned to someone's rooms to criticise it. Amongst the company was a young and fashionable girl who was asked her opinion, and who replied, "I am no judge of artistic composition, but I know that Leighton is the best waltzer in Rome."

One day I found him drawing the flower of the pumpkin, and he said flowers were quite as hard to draw as human heads if you drew them conscientiously, but doing that rested with yourself,

for there could be no critics. He said of drawing that the great thing was to thoroughly understand the structure, and that then by patience and labour you could express the outline and the modelling. In 1859, while at Capri, he drew the celebrated Lemon Tree, working from daylight to dusk for a week or two, and giving large details in the margin of the snails on the tree.

He took the greatest interest and delight in Mason's elaborate compositions in line, and prophesied that this rare talent would some day be appreciated; and he encouraged Mr. Poynter in his desire to be a painter.

Early in January 1854, the full-size canvas for the "Cimabue" was squared up and the painting began, Leighton's plan being to settle on what he meant to paint, and get the composition of line as perfect as possible; then to make a finished pencil drawing for the form, and an oil sketch for the colour, and then studies of the nude figures and drapery; to enlarge the outline drawing to the size wanted, to draw the figures carefully from his studies, and then to paint in each figure in the nude from life, and then the drapery on the figures. Shortly after Easter of 1854 I left Rome for North Italy, and, at Leighton's suggestion, with the late W. Burges, A.R.A.

I did not return to England till the middle of 1855; in this year his "Cimabue" was exhibited at the Royal Academy, and was bought by Her Majesty the Queen. With some of the proceeds he gave commissions to all his poor artist-friends in Rome. I saw him during his flying visits to England, and afterwards at his studio in the Rue Blanche in Paris. There he painted "Pluto and Orpheus," called, I think, "The Power of Music," his father having sat for the Pluto; and there, I think, he began the "Romeo and Juliet." During this time he paid a visit to Algiers, and painted a large drawing of the frantic dancing he saw there in a Jew's house, as well as two small heads, and a girl with a cat, almost the only drawings in water-colour he ever painted. In 1860 he took a studio at Orme Square, Bayswater. It was during this time that his conversation was so brilliant and so free from restraint. I remember a summer afternoon I spent with him, Mason, and Murch on the terrace at the Crystal Palace, when he gave vent to the freest criticism on books, artists, philosophy, science, and the methods of teaching, and deplored the waste of time to students of making large chalk studies, when everything that was wanted could be shown on a sheet of smooth paper seven inches high, with a hard pencil. He was a great admirer of Boxall and his delicate painting, of Mr. Watts's and Sir E. Burne-Jones's work, and persuaded the last two to join the Royal Academy. In 1864 he was made an A.R.A., and after this he became very cautious of expressing any but the most general opinions on contemporary English art, as his remarks gene-

rally got into the papers. In the following year he obtained a piece of ground next Mr. Val Prinsep's, in Holland Park Road, and had a house and studio built there, which he occupied in 1866. In 1868 he was made an R.A. His studio was lengthened in 1869 for some big canvases. During his visits to Rhodes, to Cairo, and to Damascus he made a large collection of lovely Saracenic tiles, and had besides bought two inscriptions, one of the most delicate colour and beautiful design, and the other about sixteen feet long and strikingly magnificent, besides getting some panels, stained glass, and lattice-work from Damascus afterwards: these were fitted into an Arab Hall, something like La Ziza at Palermo, in 1877.

The love of being surrounded by every kind of beauty was one of the strong characteristics of the man, and doubtless helped him to that catholicity of taste which fitted him for the position of President of the Royal Academy; for in that position every phase of painting, sculpture, engraving, and architecture had to be appreciated and cherished. He was elected President in 1879, and in this dignified position his winning manners and his gift of languages did much to turn the attention of great foreign artists to the merits of the English School. It also gave the weight of a great Body to his recommendation for the removal of the Wellington Monument to the site for which it was intended, and to its completion by the equestrian statue; to his magnificent gift of a picture to the Royal Exchange, and to his advocacy of the British School at Athens, the Egyptian Exploration Fund, and of the various movements for the encouragement of Art started by public bodies or by private munificence.

He gave us portraits, processions, scenes of action, idyls, dramatic pieces, decorative pictures, black and white, and sculpture. Those who loved purity of form, subtilty of composition, a certain stateliness of arrangement and splendour of colour looked forward with eagerness to each exhibition. Few portraits are finer and more powerful than his heads of Sir F. Burton, of Cavaliere Costa, and the ideal head of the Roman Mother; few idyls more delightful than "The Summer Moon," than the "Shepherd teaching the little Girl to play on the Flute"; or more lovely than "The Garden of the Hesperides"; few dramatic pictures are more touching than "Electra at the Tomb of Agamemnon"; few more terrible than "Rizpah"; while for subtilty of line "Simœtha the Sorceress" deserves to be cut in a gem to preserve it for ever.

Browning mentioned the "Alcestis" in his *Adventures of Balaustrion*, and Leighton is supposed to be sketched in *Lothair* and in *A Week in a French Country House*; but those who knew him well could hardly recognise the portraits.

A truer and stauncher friend never existed, nor

one more ready to give advice to those who really wanted it, and even more ready to help distress with his purse. A man with an excellent memory, a splendid orator, with a profound knowledge of the history of Art, and a sympathy with it in every phase; an accomplished linguist, a soldier, and a patriot! A man with a loftiness and nobility of soul, without one smirch of the vulgar, the mean, or the ignoble, that made one seem to be breathing a purer air when in his company!

It is said he has left little behind him but the memory of his good deeds; but he has left a house built for his special requirements, and filled with those things that were needful for preserving his catholicity of taste; in which few great transatlantic and foreign artists have not met with a hearty welcome, and felt the brotherhood of Art.

If Italy can preserve as national memorials the houses of Petrarch, of Boccaccio, of Michelangelo; if Antwerp can keep the house and printing-offices of Plantin untouched, as glorious records of the past; surely England can afford to keep this house untouched, as the great man left it, and with a qualified curator; where his sketches, his studies, and his MSS. may be consulted by students of the future, and where posterity may see how a great artist was surrounded in these days. This was the house in which he lived, and in which he died, and in which he spoke his last touching words, "My love to the Royal Academy!"

GEORGE AITCHISON.

## CHRONICLE.

### The Prizes and Studentships 1896-97.

Full particulars of the subjects set for the Prizes and Studentships 1896-97, with the conditions of competition and award, will be found in the pamphlet issued to subscribing members with the last number of the JOURNAL. It is unnecessary, therefore, to give more than the following brief indication of the nature of the Prizes and the subjects set:—

The Essay Medal and Twenty-five Guineas.—*Subject*: "The True Value of Tradition and Precedent in Architectural Design."

The Measured Drawings Medal and Ten Guineas: awarded for the best Measured Drawings submitted of any important building, Classical or Mediæval, in the United Kingdom or abroad.

The Soane Medallion and £100.—*Subject*: Design for a Provincial Market Hall.

The Pugin Studentship (Silver Medal and £40): awarded to the candidate who submits the best selection of his own drawings and testimonials.

The Godwin Bursary (Silver Medal and £40): awarded to any member of the profession who submits the best selection of practical working drawings, or other evidence of special practical knowledge, and testimonials.

The Owen Jones Studentship (value £50): candidates must submit testimonials, with specimens of their drawings showing knowledge of colour-decoration, and compositions in writing exhibiting acquaintance with the leading subjects treated in Owen Jones's *Grammar of Ornament*.



The Tite Prize (value £30).—*Subject*: Design for an Italian Villa and Ornamental Garden.

The Grissell Gold Medal and Ten Guineas.—*Subject*: Design for One Bay of a Church, consisting of Nave and Aisles, vaulted in stone throughout.

The Aldwinckle Studentship (value £50): awarded to the person who, among all those submitting works for the Prizes and Studentships 1896-97, will, in the opinion of the Council, best carry out the donor's intentions.

The Ashpitel Prize (books value £10. 10s.): awarded to the Student who most highly distinguishes himself in the Final Examinations 1896.

#### The late William Horton [F.].

Mr. William Horton, a Fellow of the Institute since 1888, died at his residence at Flixton, near Manchester, on the 14th December last, in his 63rd year. He was senior partner in the firm of Messrs. Horton & Bridgford, architects, of Manchester. The firm enjoyed an extensive and varied practice in Manchester and neighbouring towns, among their more notable buildings being the Conservative Club, carried out in conjunction with Mr. R. Walker [F.]; Messrs. Lewis's premises in Market Street, Manchester; the Palace Hotel and Victoria Baths, Southport, &c. Mr. Horton was a member of the Allied Society at Manchester.

#### Free Lectures on Building, &c.

The Carpenters' Hall course of free lectures on matters connected with building opens on the 26th inst. with a lecture on the Façades of the English Cathedrals, by Mr. H. Heathcote Statham [F.]. On the 4th prox. Mr. W. H. Preece, C.B., will treat of Electricity in connection with Building. Professor Banister Fletcher [F.] follows, on the 11th prox., with a lecture on "A Nation's Architecture"; and Professor T. Roger Smith [F.], on the 18th, with one on the Decay and Failure of Buildings. The closing lecture on the 25th prox., by Mr. A. R. Binnie, M.Inst.C.E., will deal with Blackwall Tunnel.

#### The British Museum Excavations in Cyprus.

The excavations in Cyprus carried out during the year 1896 by Mr. H. B. Walters, on behalf of the Trustees of the British Museum, have resulted in a number of extremely interesting and important finds. The region explored, the site of the ancient city of Curium, had already yielded abundant spoil to the excavator. A special feature of the excavations was the discovery of a necropolis dating from the Mycenaean period. It is stated that this cemetery, which lies on the side of a low hill to the east of Episcopi, represents the site of the original Argive, or Mycenaean foundation, and that the city had been transferred to the site now known as the Acropolis towards the end of the sixth century B.C., that being the date of the earliest tombs there. Among the pottery found in the tombs were some specimens of remarkable rarity; in particular, two large vases belonging to a class previously known only by four examples, found on pre-Phœnician sites in Cyprus, and a

fragment at Nauplia, in Greece. A sard scarab with Egyptian hieroglyphics, discovered in one of the tombs, has been pronounced by competent authorities to bear the name of Khonsu, a deity introduced into Egypt about the period of the twenty-sixth dynasty (666-527 B.C.). Not the least important of the finds is a small steatite scaraboid on which is an intaglio design of a bull lying down. The workmanship and drawing are described as most admirable and masterly, recalling the famous Vaphio gold cups in the Museum at Athens. Its date is put at about 700 B.C. Other gems include a scarab of Thothmes III., a scaraboid with an ibex, and an archaic scaraboid gem set in a silver ring, representing Herakles running. There are also sundry finger-rings, earrings, bracelets, a gold chain necklace of very delicate workmanship, and various bronze objects. These latest additions to the National Collection are being exhibited temporarily in the Etruscan Room of the British Museum.

It is arranged that the excavations this spring are to be on a new site on the north of the island, and they will be superintended, for a time at least, by Dr. A. S. Murray [H.A.], who starts for Cyprus about the 10th prox.

#### Additions to the Library.

The Secretary of State for India has presented the *Tarikh-i-Rashidi* of Mirza Muhammad Haidar. This important history of the Moghuls of Central Asia has been translated by Mr. Denison Ross, and edited, with commentary, notes, and map, by Mr. N. Elias, H.M. Consul-General for Khorasan and Sistan [London: Sampson Low, Marston & Co.].

*The History and Early Development of St. Mark's, Venice*, by Mr. Phenè Spiers [F.], F.S.A., reprinted from the *Transactions* of the St. Paul's Ecclesiological Society, has been presented by the author. Mr. Thomas Arnold [A.] has forwarded *Restoration of the Mausoleum at Halicarnassus*, a reprint of an article which he contributed to *The Builder's Journal*. *British Geology* is the title of another pamphlet received from its author, Mr. T. Mellard Reade [F.].

An illustrated pamphlet, entitled *The Signs of Old Fleet Street to the End of the Eighteenth Century*, has been presented by the author, Mr. F. G. Hilton Price [H.A.], Director of the Society of Antiquaries.

Mr. Alex. Koch, the editor, has forwarded the supplemental volume of his *Academy Architecture and Architectural Review* 1895, which contains reproductions of drawings not available until the close of last year's Exhibition, a selection of recent designs by English architects not exhibited at the Academy, illustrations of sculpture from the London and Paris Exhibitions, and illustrations of architectural designs for execution abroad.

*Architecture*, a handsome addition to architectural periodical literature, has been received. The editor contributes a well-illustrated appreciation

of Mr. Norman Shaw, R.A.; there is an article by Mr. A. E. Street [F.] on the life and work of his father, the late Mr. George Edmund Street; and Mr. J. Alfred Gotch contributes a preliminary article on the "Renaissance in England."

Mr. G. A. T. Middleton [A.] has presented to the Loan Collection a copy of his *Surveying and Surveying Instruments*.

#### Marble Verde Antico and the Old Quarries.

Mr. Wm. Brindley, F.G.S., whose contributions to the TRANSACTIONS (New Series) on "Marble: its Uses as suggested by the Past," and on "The Ancient Quarries of Egypt," are of acknowledged value, has forwarded the following:—

The celebrated marble, verde antico, so highly valued by the Romans for decoration, was known to classical writers as "Thessalian," taking its name from the province of Greece in which it was found; also as "Lapis Atracius," the city of Atrax being supposed near. The best ancient description given us of the marble is in the poem of Paul the Silentiary. This, as translated by Messrs. Lethaby and Swainson in *Sancta Sophia*, reads:

The marble that the land of Atrax yields, not from some upland glen, but from the level plains; in parts fresh green as the sea or emerald stone, or again like blue cornflowers in grass, with here and there a drift of fallen snow, a sweet mingled contrast on the dark shining surface.

This description is very accurate both of the material and locality. Although this stone must have been known to the Romans before the time of Christ, and was without doubt one of the latest marbles worked by the Byzantines, yet on the invasion and capture of Thessaly by the Turks the locality of the quarries became entirely lost. About twenty-five years ago it was announced that the old quarries of verde antico had been found on the Greek island of Tenos; and much of this marble was quarried and sold as verde antico, the marble merchants in England of that time being ignorant of the nature of the real material. The French, when building the Paris Opera House, made considerable search to find various old quarries worked by the Romans, but without any good results as regards verde antico; nor has our advanced geological knowledge of rocks revealed to us any green marble to compare for beauty with this ancient one. The genuine material is easily distinguished from any other green marble by being an ophealcite breccia, composed of angular pieces of light and dark green serpentines and pure statuary marble, the whole being cemented together with a brighter green, while the marked character is that the snow-white patches have usually their edges tinted off with a delicate fibrous green, which radiates to the centre of the whites. The cementing matrix is also of the same fibrous structure, while a "bluish bloom" pervades the surface.

Ten years ago I visited Constantinople to study the marbles of St. Sophia. When there I became

much impressed with the real beauty and great variety of verde antico, for in no other city can such masses of this marble be seen, as not only St. Sophia, but all the other Byzantine churches and mosques are full of columns and slabs, while in the streets are seen huge sarcophagi.

The abundance of this marble here and the absence of certain others which are plentiful in Rome convinced me that the quarries of verde antico must have been conveniently situated for the old Byzantine builders.

As my delight is old quarry hunting, and as I knew the very high price fragments dug up in Rome fetched, I determined to try and find the lost quarries, and see if they were worked out or not. Knowing they were not to be found in the Archipelago, I resolved first to examine the sea coast of Thessaly; but not being able to go that season, I commissioned an intelligent Greek guide in Constantinople, who occasionally went to Salonika and Tempe, to examine the rocks of that district for me. No good results having come out of this, in the following spring I visited Greece, going on into Thessaly to the supposed site of the ancient Atrax; but, alas! when, after much fatigue, I did get there, I found the range of rocks which here cross the Peneus to be only a poor limestone. Returning to Larissa in continuous rain, I noticed that the boulder "pitchings" of this dirty old Turkish city were mostly boulders of verde antico, the same rounded stones being also plentiful in the old houses. Then, finding a very old resident Turk, and inquiring of him where the stones were got, he replied that they were not quarried, but gathered in the ploughed fields of the plain. The watershed to this alluvial district I soon observed was the mountain range of Ossa, and some isolated foot hills distinctly visible from Larissa appearing metamorphic (so promising) I determined to examine them. Being now obliged to leave Larissa, I instructed and paid a French engineer of the roads to employ practical quarrymen to search. This was done twice without any good results. I then sent copies of my sketches of these hills, marking the spots I was most anxious to have examined. The search party went again, and found one quarry, of which particulars and samples were sent me by post. These were very satisfactory. I then began to negotiate for the working of the rock. The negotiations lasted two years, when I was told by my agent that all was agreed. I then went out to Greece again, and visited the rocks myself, when, to my agreeable surprise, I found not less than ten ancient quarries, all of them varying somewhat in character, but producing every shade and variety of verde antico as seen in the buildings of ancient Rome and Constantinople. Some other extremely rare greens, seen in the Vatican and Louvre Museums, which had always been attributed to Egypt, I found had come from these quarries.

Not less interesting were the quarries them-



selves, as showing the ancient methods of working. One large quarry face consists of a series of vertical, almost semicircular hollows, of varying large diameter; a mass in front of this shows smaller hollows—(here no doubt were extracted the monolith columns of St. Sophia, Constantinople, the rough columnar form being rounded as quarried)—these hollows being the matrices allowing room for the workmen to axe round the columns, less at the back, and more at the sides, where the quarryman would stand to work. The shafts would thus be produced standing free from the rock; they would then be severed at the base and lowered over by ropes and wedges, while the projection between the hollows would produce the next row of shafts. The dimensions of the monoliths in St. Sophia are—the eight on the ground floor 25 feet 6 inches long, and 3 feet 7 inches in diameter; the forty on the gallery floor are about 22 feet long and 2 feet 6 inches in diameter. In addition to these special columns there are now remaining over 500 monolith shafts of this marble in the various ancient buildings and museums of Europe.

Another quarry contains a block of large dimensions squared up for a sarcophagus. This is still attached by the bottom bed to the solid rock, a passage being cut all round it: this block would make a sarcophagus similar to the three famous ones in Constantinople, one of which is in front of the Pantocrator Church, the other two near the Seraglio. Two or three of the workings have sawn faces, and sawn blocks and scantlings for slabs have the saw-cuts remaining below where they were wedged off. Everything seen in their methods of working points to the minimising of weight for transit.

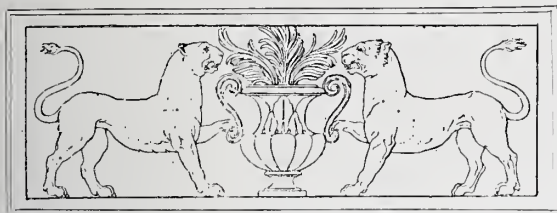
The quarries are situated at Casambala, about seven miles to the N.E. of Larissa, near the road leading to the Vale of Tempe. There is a village near which is still named Marmariani: this is probably the ancient name handed down as the marble-workers' town, and is thought by Leake to be the site of the ancient Sycurium. The old quarry roads are now mostly grown over. The marble blocks were taken by the Vale of Tempe route over the famous military road cut out of the solid rock by Lucius Cassius Longinus, the Proconsul B.C. 127. The rock-floor of this road shows, by the deep furrows produced by the wheels of the oxen waggons, the large amount of heavy block traffic that must have passed over it to the port of shipment. The rock was probably first known to the Romans about 170 B.C., after the great battle fought with the Macedonians, as described by Livy. Perseus advanced to Sycurium to await the approach of the Romans, as "Sycurium stands at the foot of Mount Ossa, the southern side of which overlooks the plains of Thessaly." "Besides these advantages of situation, the place enjoys a most healthful air, and a never-failing supply of fresh water from the springs which lay around." These springs,

which come out at the base of the hill, are still of large volume, and are of somewhat warm temperature. The marble deposit, which is about 60 feet thick, appears to lay on a slaty formation, and is overlaid by a thick bed of dark green serpentine. It is impossible to say when the quarries were first worked, but as a Greek Stella, of good classic form (now in the Museum of Larissa), is made of the marble, and as it is found in some of the palaces and baths of the Cæsars in Rome, we may infer they were worked at an early date.

On the rebuilding of Constantinople and the erection of Byzantine churches, Thessalian marble became the material mostly used in architecture for the supporting monolith columns, being no doubt selected for its beauty and soundness; as, being free from "bedding," it was less likely to split under great pressure. From the earliest Christian times until now, the church of St. Sophia has been the most sumptuous and harmoniously coloured interior in the world, its chief beauty being due to its monoliths and slabs of verde antico marble used in contrast with Egyptian porphyry. Some old writers state that the eight immense monolith pillars were taken from the Temple of Diana at Ephesus; be this as it may, they certainly were extracted from these old Thessalian quarries. In addition to all the old churches and mosques of Constantinople, those of Salonica, Jerusalem, and Egypt all contain large quantities of this green marble, and every visitor to Venice must remember the famous group of columns in the façade of St. Mark's, so beautifully described in *The Stones of Venice*. It is to be seen in nearly every church and palace in Rome and every other city of Italy, either in the way of shafts to columns, wall-decoration, or articles of vertu. Perhaps the grandest object in Rome in verde antico is the large *baldacchino* over the high altar of Santa Maria Maggiore: the large canopy is all of this material, and is supported by four columns of Egyptian porphyry.

The Moors of Spain well knew the beauty of this green, as it is seen in their Mosque of Cordova and the Alcazar of Seville. Pieces are plentifully turned up by the plough in the cornfields over ancient Carthage, and Sir Lambert Playfair found it in the Roman ruins of the (Lotus-eating) island of Djerba; in short, all over the Roman empire this marble was taken and used for decoration. On the revival of art in the Renaissance period, verde antico was much sought after; and as none could then be got (except by the destruction of some ancient work), it became precious, and was sawn up into the thinnest slabs and used as a veneer for wall-surfaces, and even large columns were cased with vertical strips.

The Medici family of Florence used it freely for articles of vertu and the decoration of their palaces; since then the French have perhaps been the largest workers of this marble, using it for all sorts of ornamental objects, frequently in combination with ormolu mounts.



## MINUTES. VIII.

At the Eighth General Meeting (Ordinary) of the Session, held Monday, 17th February 1896, at 8 p.m., Mr. F. C. Penrose, F.R.S., *President*, in the Chair, with 15 Fellows (including 7 members of the Council), 23 Associates, 1 Hon. Associate, and several visitors, the Minutes of the Meeting held 3rd February 1896 [p. 229] were taken as read and signed as correct.\*

A Paper by Mr. R. Phené Spiers [F.], F.S.A., entitled SAINT-FRONT OF PÉRIGUEUX, AND THE DOMED CHURCHES OF PÉRIGORD AND LA CHARENTE, was read by the author, and, having been discussed, a Vote of Thanks was passed to him by acclamation, and the Meeting separated at 10 p.m.

## PROCEEDINGS OF ALLIED SOCIETIES.

## THE NORTHERN ASSOCIATION.

Traceries, and their position in Architectural Design.  
By William Searle Hicks (Newcastle).

Read 29th January 1896.

It has always seemed to me that tracery is one of the most interesting things in architecture—at all events, it holds a high place in my regard. It is an attractive study. The term tracery becomes almost synonymous with the term architectural ornament, so that a Paper on Traceries ought to be one of surpassing interest, and if it fails, the fault is less likely to be with the subject than with the handling of it.

Nature's designs, so varied, so consistent in principle, so infinitely suggestive in motive, deserve a great deal more than a passing examination to begin with. The traceries that seem to cover the sky on some mornings and evenings, filmy and lacelike, in endless and intricate perspectives (illuminated with golden and rosy glow from the rising or setting sun, stretching across the blue vault of the sky)—these are the first things that come to one's mind, but these are dreamy and ethereal, and they pass away rapidly. They are not constructive traceries like those of earth. They hold, in relation to the traceries of architecture, much the same position as the whispering of the winds to the rhythmical music of stringed instruments. They are the first suggestion to the poet's mind of the screens between earth and heaven; they establish the principle of the beauty of tracery; they move one's admiration and emotions, and they pass away and are forgotten. In the same way, who can help wondering at or admiring the traceries of the sea foam, which one looks down upon, the white lace fringe of Nature's green mantle? This, too,

is transitory, like that of the clouds. The beauty is undeniable, but it is only beauty, that is to say, beauty without use: æsthetic beauty, affecting the mind and the feelings only, and, as I said before, establishing a principle of design, but going no further. Whether we look up to the heights or down to the depths, we find Nature decorating herself with traceries on her best days; when she wants to be a little better-looking than on her dull or ordinary days.

Art follows Nature in all her great principles, and this is a somewhat different thing from copying Nature in matters of detail—different because Nature's methods differ somewhat from artists' methods. I think we are quite right in going to Nature for the principles of design, though it is quite debatable how far we are right in adhering to Nature (in detailed imitations) for our decorative patterns.

Be all this as it may, it is quite clear that Nature is the fountain of art, the educator of imagination, the suggester of forms; and that the standard of ultimate criticism and ideal beauty cannot anywhere be found except in Nature at her best, Nature in health, Nature in full vigour, Nature in early growth, Nature in final development.

This, then, is why we appeal to Nature. The fact is that our minds have no power to conceive original beauty apart from Nature; and when our conventional forms are far departed from the natural forms of beauty which suggest them to us, then we begin to perceive that Art is a department of Nature; so that artistic thoughts grow in a natural sequence, one upon another, not unlike natural evolution—the principle acknowledged, some sort of development follows as a matter of course. Art is one department of Nature.

Before passing on to architectural traceries, I will say this as to natural traceries (whether piercings, relievings, or inscribings):—Nature uses three sorts of traceries, (1) Geometrical forms, as in flower and leaf; (2) Growing or consecutive forms, as in stems, branches, and tendrils, sea-weeds, &c.; (3) Independent forms, without manifest structure, such as random variegations, or the cloud and foam shapes above noticed, or the shapes made by the crystallisation of ice, on the window panes and pavements.

Nature uses tracery for three purposes:—(1) To decorate her surfaces; (2) To edge or border her masses; (3) To serve as screens; to partly conceal, partly reveal her backgrounds, her treasures beyond the barriers.

I think I am right in saying that these three purposes in Nature have their exact counterpart in Art:—(1) The decorating or relieving of plain surfaces; (2) The edging or bordering of masses; (3) The screening of what is behind. I think I can almost as safely say that Nature's forms have also their counterpart in Art, viz.:—(1) The geometrical; (2) The consecutive or branching; (3) The independent or unstructural or random traceries. But, inasmuch as architecture is constructive art, I think we may keep down our admiration rather, from the less constructive to the more constructive forms. I suppose this is why some of the accepted critics spoke of geometric forms as containing the only true principles of tracery, and the branching forms as indicating decay. But it seems to me that decay only comes with the predominance of unconstructive forms. In some places these are very beautiful, but I do not care enthusiastically for mere intricacy without rhyme or reason. I thoroughly approve of all constructive forms, whether geometric or branching; random traceries must take a lower place.

It must not be forgotten that there is a third type of constructive tracery in Art, which is hardly to be found at all in Nature, except suggestively. I mean when the love of intricacy finds its vent in interlacements and plaits. The suggestion here is rather in Art than in Nature; in weaving, plaiting, basket-making. There is a witchery and charm also in the "twisting of the rope," the web of the spider, the rigging of ships—none of which is without

\* Prior to the signing of these Minutes, objection was taken by Mr. Z. King [F.] that they were not a true record of what had transpired at the Meeting, inasmuch as omission had been made of the fact that Mr. Woodward and Mr. Stannus had spoken in support of the Vote of Condolence on the death of Lord Leighton; neither were their remarks reported in any other part of the JOURNAL.—Mr. Stannus [F.] considered that the Minutes were quite correct as printed; the occasion did not warrant the publication of the few remarks made by Mr. Woodward and himself.—The Hon. Secretary observed that the names of those who spoke on the matter were mentioned on another page of the JOURNAL [p. 222], and he considered that was quite sufficient.—The Minutes were then passed, and signed by the President as correct.



its suggestive power to the eye which sees and perceives. Also a fourth type of constructive tracery, where material has suggested principles; where the rigidity of stone has suggested rigidity of ornament (not in stone only), where ductility of metal has suggested the bending and twisting forms (not in metal-work only), and so on in other ways. I should be disposed to admit these third and fourth types as perfectly reasonable and good and fundamental, though not perhaps so noble in origin as the forms which are derived from Nature herself direct—they are part of the natural evolution of art.

If you have followed me thus far, I think you will be prepared to admit what is not so fully recognised as it might be, viz. that tracery as an architectural principle is quite as applicable to the ornament of Classic architecture as of Gothic and Oriental styles. Certainly, in Classic art tracery is chiefly confined to decorating and relieving surfaces and mouldings, whereas the Gothic art uses it in the fuller and freer manner, leaving the mouldings uncarved. But the principles are the same in all, more or less, for the Classic ornaments and the frets, which decorate a frieze, or a panel, or a moulding, are tracery just as much as if they were pierced and suspended in mid-air, as in the Gothic styles.

It is interesting here to look a little more closely into the reasons for the distinctive character of Classic *versus* Gothic forms of tracery. It has been said (though I cannot quote the author) that Classic art is rather in sympathy with the sculptor's thoughts: it is statuesque. Gothic is rather in sympathy with the painter's thoughts: it is picturesque. There is no doubt of the truth of this saying, and it sets one thinking on fresh lines of thought.

The origin of Classic forms may be found in the sub-tropical lands of Egypt and Greece, where the powerful life was the animal life, that gives the sculptor his models. But the Gothic art arose among men who lived forest lives, where all the varieties of wild vegetation, of wild birds, and forest creatures are to be found, such as the painter revels in—lands of fantastic myth and fable—and thus we see the animal kingdom at its greatest in Classic thought, and the vegetable kingdom at its greatest in Gothic thought: the sculpturesque element in the one, the picturesque element in the other. The Classic is the more restrained within its own limits. Its frets and laces suggest the ornaments on the drapery of the human figure; the Gothic is the more free and fantastic, the more wild, grotesque, and unlimited; its traceries suggest the dreams of a painter and a child of the forest. This is almost a truism, but I want it here, because as a matter of first suggestion it is clear enough that the Gothic grew out of the Classic. It was not altogether independent, but it was a transition in the following order—(1) Egyptian, (2) Greek, (3) Roman, (4) Byzantine, (5) Romanesque, (6) Gothic. The Renaissance and modern are left out of count for the present. The influence of Oriental and the Saracenic arts was incidental, and they would lead me away from the main line if I would let them. I shall also mention them presently, but meanwhile it is my purpose to speak of the Classic as the early manner, and the Gothic as the later manner, in my endeavour to account for the contrast between the restrained use of the Classic traceries and the unrestrained use of the Gothic.

It is curious to work out into this matter Mr. Ruskin's saying about the sign of decay being the "forsaking of the mass for the line"—architectural style running to seed. That is a most powerful half-truth, in art criticism—it is not a whole truth. There is a sound philosophic thought below it, which makes it very attractive; but the gradual refinement from mass to line goes very much further than merely to mark decay; it also marks all growth. You may see the principle in comparing the Classic orders among themselves; you may perceive it almost at a glance in the superficial comparison of the Classic with the Gothic styles: the Classic is massive—

where the Gothic is flimsy. The great cylindrical column had already given way to slender shafts in many cases; the broad soffits to recessed orders and deeply undercut line mouldings. The wall divisions between windows had already been refined down to mullions, long before Art reached the point at which Mr. Ruskin prophesied its downfall, because forsooth the mass had given way to the line in the traceries. Mass has always been giving way to the line ever since architecture began. Certainly when the Normans started afresh they appreciated mass, and made heavier masses than they found; but the Norman idea of mass was one in which line had already begun to predominate. That traceries should develop the study of *line* is but logical and consistent, not otherwise remarkable, and in no way a mark of decay, except that all development in life, all gradual refinement, is a progress towards death; and that all increased intricacy of thought is a progress towards exhaustion and weariness.

It seems to me inevitable that so obvious a suggestion as that which Nature affords us in her tree branches, should be taken up and freely adopted, as it was by our artists. To have lost sight of it would seem to me more like a sign of decay of artistic power than the fact that they seized it. But they allowed it to run away with them. Their enthusiasm for its fantastic richness left them (to modify Disraeli's saying) "inebriated with the 'exuberance' of an extravagant display; and so it came to an end, because they could neither keep up the excitement nor the cost of such an expensive game.

But we may ask the question: were its forms or its principles exhausted? To this I answer No, quite unhesitatingly. Enthusiasm was exhausted, but principles were not. The geometrical forms were never exhausted in the days of the geometrical styles. The geometric character of many of the later traceries shows this. For local example the Carlisle, Brancepeth, Hexham, and Jarrow traceries, and those which suggested Billings's well-known book on the "infinity of geometric design"—these, and the Moorish, Saracenic, and other Oriental screen traceries, based on intersections of curved with straight and radiating lines, varied with geometric foliations, in which the forms are set out on squares, oblongs, triangles, diamonds, pentagons, hexagons, and other polygons, all of which are purely geometrical—all these go to show what I say, that in the geometrical period (as it is called) the geometrical mines were not worked out or exhausted at all; they were only abandoned because the suggestion of growing and branching traceries was too enticing and too obvious to be resisted at the time. But now I think we come to something which gives a point to Mr. Ruskin's doctrine about that period being the period of climax in style, the decay dating thence.

Up to that period all influences had been pouring into the one stream of thought. Whether the Scandinavian and Celtic love of intricacies and grotesque serpents and dragons, and other old Runic ornaments, or whether the Frankish love of mystery, romance, and grandeur, or whether the Byzantine and Oriental love of wealthy enrichment be taken as accounting for the style of earlier ornament, it matters not, I think. It is evident that there has been a concentration of it—all the Norman and Romanesque enrichment shows this—borrowing some of its characteristics from the North, and some from the South, and some from the East. They developed consistently enough till they reached the geometrical period; from that point they began to diverge in style. (1) The French began their Flamboyant; (2) the English began another sort of curvilinear, and carried it on to Perpendicular; (3) the Germans went their wilful ways, in defiance of all principle except freedom and fancy and unrestrained imagination; (4) the Spaniards went in for intricacy and power of shadow; (5) the Italians began at once with the Early Renaissance and all its refinements, soon forsaking the Gothic principles, which they had never held with the same tenacity

as the more Northern races had. I will say more of the Renaissance presently, but will now follow the French, English, and Germans a little further.

And first the French, because the French were really the leaders. The great geometrical French window traceries of the thirteenth century are too well known by you to need illustration—they are simple to the verge of monotony. Then we pass on—I wish I could do justice to the next period of French work, in which the geometric is just giving way to the flowing. The aisle windows of the nave at Amiens are the most impressively beautiful I have ever seen. The characteristic of them seems to me to be a most perfect study of the subordination of lines and of the outline of foliations. It is difficult to describe the delicacy of the shapes, but I remember wandering up and down looking from one variety to another, feasting my eyes, and thinking them the noblest windows I had ever seen. From this later and refined geometrical, the style passes rapidly on to the fully developed Flamboyant, of which, perhaps, Abbeville is one of the most perfectly artistic examples, in its lovely west front. Nearly all the setting-out is still purely geometrical, but the tangent curves are so well marked now that all the lines are easy and flowing and gracious, and the variety is endless, in rose window, door gables, galleries, and traceried parapets. And note here what I said before about traceries to decorate the surface, and traceries to edge or border the masses, and traceries to form screens, viz. the windows themselves. The harmonious mixture of flowing lines with geometrical and perpendicular makes this front a specially interesting and pleasing one, for the mixture suggests nothing of incongruity. Later, the French traceries passed on into a florid luxuriousness and feebleness of line, till at last they lost much of constructive beauty, and were so much overdone as to be uninteresting—as extravagance generally becomes. But if the geometrical period did not exhaust the capabilities of geometric arrangements, still less did the later French exhaust the forms which may be made in curving and branching lines. They seem to have ceased for very weariness, and in the later work of Francis I. and Henry IV. to have taken to semi-classic forms, relieved by fretting out the classic ornaments, and converting them into traceries, so as to assimilate them with the surviving Flamboyant.

In England this was all done differently. The sober and less imaginative English worked out their thoughts on steadier principles of self-development. The geometrical gave way to the flowing, but hardly to the Flamboyant, except in rare examples. We in England have a wealth of beautiful specimens of branching traceries all over the country—notably at York (west window) and Carlisle (east window)—until by degrees the rigid and stony perpendicular took firm hold on the English mind, and the stiff principles of regularity never gave way to extravagant excess of curvature. The flowing and obvious geometrical character practically died out, except in a few of the very best examples, such as Wrexham. This, indeed, retains all the best principles of tracery formation, which are seen again in the rich fan traceries which adorn the fretted vaults of the last years of the Gothic period.

In Germany, the logical minds which argued, that because you might bend the lines of a mullion, therefore you might bend and interlace your pinnacles, which are of the same material, led on the reckless Germans into all sorts of most interesting vagaries, leaving us infinite suggestions of beautiful and delicate intricacy, mixing and combining architectural forms with stems, foliations, foliages, straps, and all other bending and writhing forms, in endless profusion and complication. At this day we have numberless examples, not exactly to copy but to study from, bringing them back into steadier and more reasonable compass, if we can. The most prominent characteristics are their intricacy and lace-like delicacy, and, next, the due subordination of broad constructive lines, with the slender subsidiary ones ;

and finally we see the frequent repetition of main designs with endless varieties of detail. I think the first principle is well shown in a German diptych example—it is a fifteenth-century tracery in the Berlin Museum. It is intricate enough : stem and leaf work are springing from a central whorl, writhing and interlacing in perfectly harmonious curves, with no thought of sameness or symmetry, except in its boundaries.

The second principle, viz. subordination, is clearly shown in another example in the same museum. This might have been English instead of German ; it is so nice, and so refined and steady ; the three geometrical divisions, with slight cusps and delicate perpendicular spandrils unequally filled in, and so making a semi-conscious variety, are all very delicately conceived. In a third example, which one cannot help admiring, we see the principle of subordination beautifully, but this example is more characteristic of German work. I think the effect of the double ogee shape is excellent in quantity and weight and power of line, when compared with the filling-in of the delicate stems and foliage ; but it is seriously marred by the abrupt cutting off of architectural forms, which to an English eye is quite intolerable and unreasonable. For all that, the example is full of suggestion, and I think it helps to bear out what I said about the inexhaustible suggestiveness of branch forms. If geometric forms were not worked out in geometric days, still less were the branch forms in the days of the later traceries ; but Nature has another suggestion for us under this head of subordination, which I do not think has yet been made the most of in art ; there is scarcely a touch of it in ancient traceries, but I have seen it in a large modern window—the east window of Sedding's church in Sloane Street, South Kensington.

The idea is this. Tree trunks diminish towards the boughs and branches—boughs and branches towards the branchlets, and the branchlets towards the twigs—and if one is looking at the sky through the stems of a winter tree, or row of trees, one sees the principle of subordination taking the form I have indicated, diminishing from the central or parent stems and outwards, to the offspring twigs. There is a suggestive thought in this, capable of more working out than it has ever yet received, in design of traceries.

Before leaving the Gothic styles, it may be well to point out the difference between English and foreign traceries a little more fully. The early French geometrical traceries are all very much alike, and the later French Flamboyant have a great deal of sameness in them.

It is chiefly in the great rose windows of the great cathedrals in France (which could not be beaten) that we find the systematic setting-out, and the perfect balance of parts, that go to make tracery work most pleasing. These qualities you find in nearly all English work of the fourteenth century, and you also find more variety in the English geometrical than in the foreign.

Sharpe's Decorated Windows will give you an excellent idea of what I mean—the geometrical windows of Tintern, Lincoln, Guisborough, and St. Mary's, York. The decorated windows of Carlisle and York Cathedrals (mentioned above) contain both of the qualities of systematic setting-out and perfect balance of parts, and are geometrically based on equilateral triangles. The French Flamboyant was too pliant, just as perhaps the English Perpendicular was too rigid.

The French artists grew impatient of any opposition of line ; everything must be pliant ; and one's eye wearies of the want of definite and forcible contrast in the window traceries. I may instance a series of windows in the splendid church of Saint-Jacques at Lisieux : some show this over-pliancy, while some are exactly like English traceries. This remark as to opposition of line hardly applies to their parapet traceries, which seem to me perfectly exquisite, and far beyond anything we have in this country.

I have almost said enough about Gothic traceries, and I



must now call attention in passing to the Eastern and Saracenic traceries, some of which evidently influenced the Gothic through the Spanish. In the Oriental work, so far as I know, we have nothing worth notice in the way of great window traceries, but only the smaller works which decorate the surface of the walls, as in the palace at Mashita; or of the doors, as at El Kanqueh, near Cairo; or which construct close screens, like those commonly called Cairene work. The well-known interlacements of Arab lattice traceries are strictly geometrical, and I may refer to a small book, by Lewis F. Day, which is very interesting in giving the principles for the setting-out of tracery and foliage patterns. It unravels their intricacies, and makes the most complex patterns quite simple and easy to understand.

Now let me notice the bronze doors at El Khanqueh. In the border we see a fret which for exquisite balance and regular series and proportion and general taste, would be very hard to surpass; it is pure tracery and fretwork—scarcely suggesting foliage at all. The central design has a geometrical outline and setting-out. A circle with twelve radiations. The curves of the ornament are tangent to the radiations. The radiating lines are not crossed. They are the base, from which the curves spring symmetrically, or the limit to which they attain. Here, again, there are slight suggestions of flowers and fruits, and the pattern is varied by the introduction of birds, beasts, and fishes. The same remark applies to the corner design as to the central. The mitre line gives the base of the pattern. This is fifteenth or sixteenth century work.

It is a long jump backwards to the sixth-century wall decorations of the palace at Mashita. All the better in some ways, if one is to show the universality of principles. Here you have the same slender branching lines, the same geometrical limits, the same introduction of birds and beasts, but rather more shelter and food for them in the way of leaves and fruits. I notice in this an interesting fact, viz. the beautiful enrichment of the mouldings. I mentioned this casually before. I am not in a position to make the most of this, but it seems at all events worth remarking that such decoration and fretting of the mouldings seem to have been usual in the Eastern and Classic arts. Mouldings are carved into eggs and darts and leaves, and chopped into dentils; but that principle never survived into the Gothic arts beyond the Norman period. In the Norman days they fretted and carved and traceried their shafts and mouldings, richly and plentifully enough, but with the Normans that class of work died out. After that you find hollow moulds, with foliage or flowers or other fretted ornaments growing in the hollows, or spaced here and there; but that mode of decorating the mouldings is forsaken in Gothic work, and only picked up again in the Renaissance. In Gothic work the severe pure lines of the mouldings are used as a contrast to the enrichment. But this is by the way. It has no strict bearing on traceries.

The concluding part of my Paper must be devoted to a notice of the influence which Gothic art has had on the revived Classic in the matter of traceries, and finally to the probable influence of all this *embarras de richesse* on our modern ways of designing.

It is quite impossible that the Gothic arts should ever be so abandoned and forgotten as to have left no impress at all on the arts that followed. We know that the transition from the late Gothic back to the Classic was rather sudden, but it was not so sudden as to leave the revived Classic exactly where the Romans left it; far otherwise. Truths in art, once proved, are so great that they must always prevail to some extent.

Thus in Renaissance work we find so much intermixture of Classic and Gothic forms at first as to endanger the gravity of classical character. In our own day we see this, for the revived study of Gothic work, side by side with the revived study of Classic, has this effect on

both, that it has lightened our Classic to the verge of frivolity, and unsettled it very much indeed; while the methods of revived Classic architecture have tended to sober and tone down all our Gothic work to the point of dulness and tameness. The master minds only have been able to struggle against this levelling process. I only mention it because in the earlier Renaissance it was quite evident we must have traceries. Life without pierced parapets and balconies would be unbearable. Pierced parapets must survive in some form or another. Archways thrown open without screens would be naked and quite disgraceful. To close them up with doors or curtains, so that no one could peep through, would be most unkind. Surface panels must be decorated. Plain panels would be much too severe to please the eyes that had learned to look at branching lines of foliage, at playful grotesques of animal life. Arabesque traceries must overrun the pilasters and panels; nay, even the scroll and foliage ornaments must be pierced and serve as screen traceries, like the example from the marble screen of Rodez, which is tracery to all intents and purposes, just as if it had been Gothic in style, made up of much the same elements—even geometry and symmetry have their place in the designs; and so you see in revived Classic we have the principle surviving with which I began of, 1st, edging the masses; 2nd, decorating the surfaces; 3rd, screening the openings.

The popularity of frets and traceries never altogether vanished. In the open screens of the seventeenth century, in the furniture of the eighteenth and nineteenth, in the ironwork and all the decorative crafts that came down to the Gothic revival, one finds them still, more or less, and in our own day more than ever. The Classic masters could hardly restrain the principle within bounds, and the Gothic masters have deliberately set it all free again.

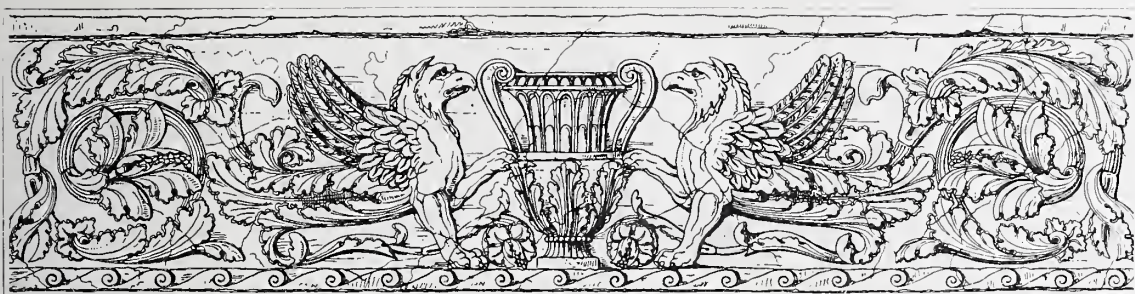
Finally, the influence of all that we are able to collect of the traceries of all ages and countries is certain to be great on our own future work. We are equipped now with material enough, with principles sufficiently well established, to make a mark on the styles of the future.

Let me recapitulate the principles of design which have produced the finest results everywhere, only remarking that good taste and first-rate ingenuity are not to be commanded by a mere study of principles, or by practice among the examples, for Art is a department of Nature. An artist must be born of that nature and nourished among the principles of his art, and then he will succeed if he stick to his work. Without the natural gifts, one can no more produce the designs of a great artist than one can force melons in the soil of a cabbage garden.

But the principles are these:—(1) Natural suggestions. (2) Geometrical and symmetrical dispositions. (3) Varied repetitions. (4) Simple subordinations. (5) Balance of parts. (6) Contrast of lines. (7) Refinement of outlines. (8) Delicacy or lightness of structure. (9) Intricacy of convolutions or of interlacings.

Parker says that “the best modern architects generally fail in the attempt to produce good Gothic tracery, while “in all other respects they have succeeded in thoroughly “good imitation of the old work, and even rival it in design.” Doubtless many things have happened since Parker wrote these words. I well remember, when I was a pupil, being told to draw traceries very carefully, and to study the shapes, depths, and sections of cusps very closely, because if one desired to get into a good office in London the most searching examination would be made as to one’s power of drawing good traceries. If my Paper has been wearisome, at all events I think these last words are sufficient to justify a careful study of even such an æsthetic and non-utilitarian subject as traceries.

\* \* The foregoing lecture was illustrated by means of numerous rubbings, drawings, photographs, and freehand charcoal sketches made during the progress of the Paper.



## NOTES ON SOME REMNANTS OF MEDIAEVAL BURGUNDY.\*

By PERCY SCOTT WORTHINGTON [A.], M.A. OXON.

IF in this Paper time compels me to deal with a few prominent architectural features only, it is not that the subject is more than just touched upon, or that I would have you think that the country which, for convenience, I call Burgundy has no other claims to notice than the interest of its architecture. I need only mention the Jura Mountains to disabuse any one of this idea; and, unlike many parts of France, the Côte d'Or and the district of Le Morvan are hilly and wooded, the towns and villages most picturesque, the river scenery as pretty as you may find. Besides this, the people are pleasant and hospitable, their cuisine excellent, and their wine superb. For artist and literary man, as well as for architect, there is ample interest.

Under the term Burgundy I do not include that part of France only with which we associate the name to-day, but all that country in France or Switzerland which was subjected to Burgundian influences. The different Burgundies are confusing, and, as kingdom, or duchy, or county, cover different areas and play different parts in history; but their earlier architecture has common features, and may be regarded as having a common descent.

A large part of the territory covered at various times by the three Burgundies, known as the kingdom, duchy, and county of Burgundy, was invaded in the fifth century by Teutonic hordes from the German forests, who settled in the south-eastern parts of Gaul—roughly speaking, that part lying between the Rhône, the Mediterranean, and the Alps. In the time of Charlemagne, Burgundy was an independent kingdom, extending between the Rhône, the Saône, and the Alps, and, of all the Frankish kingdoms, was alone in being ruled by a prince not of the Carolingian dynasty. In spite, however, of this dynastic isolation, the Byzantine influence, the introduction of which into the Western Empire Viollet-Le-Duc has taught us was due to the energy and enthusiasm of the great Emperor, found here fruitful soil; and, in combination with that of the old Roman civilisation and of the barbarian settlers, formed as distinct an early style as was developed in any of the architectural divisions of France. When, in the thirteenth century, the growth of national life in the establishment of the communes and the enfranchisement of the towns, together with all the other influences at work, had, to a certain extent, broken down the provincialism which had hitherto existed, the builders of Burgundy still retained their identity as a separate school. It is, however, principally with the old kingdom that we are concerned, and not with the later divisions of county and duchy, the former of which corresponded to the Transjurane country of earlier days, and which was transferred from the Empire to the French Crown, finally becoming the Canton de Vaud when handed over to the Swiss by Napoleon. The latter, originally Cisjurane

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revised by the author for this JOURNAL. The illustrations are from sketches by the author.



Burgundy, was governed by the great House of Valois, and was a fief of the French Crown. Of the architecture of Cisjurane and Transjurane Burgundy respectively, we may take the abbey churches of Vézelay and Romainmotier as examples.

What, then, was the origin of that architecture, and what the traditions and social conditions to which it owes its existence? We look back to the days when the Roman settlements in this part of the Empire were alarmed by the reports that vast hordes of barbarians were descending through the pinewoods to threaten their possessions. Hallam, speaking of this irruption, says :—

When the tribes from Germany and the neighbouring countries poured down upon the Empire and began to form permanent settlements, they made a partition of the lands in the conquered provinces between themselves and the original possessors. The Burgundians and Visigoths took two-thirds of their respective conquests, leaving the rest to the Roman proprietors. Each Burgundian was quartered, under the gentle name of guest, upon one of the former tenants, whose reluctant hospitality confined him to the smaller portion of his estate.

Here, then, we have the beginning of a new state of things—the old respectability startled out of its classic decay, the Roman citizen forced to live peaceably beside the new Bohemianism, and to intermarry with the newcomers, who bring fresh life, and blood, and traditions to prevent utter stagnation. With a more settled life, however, are taken over more civilised methods; among them methods of building, which lingered long and died hard. Now things had not shaken down very long, when a further invasion of the country took place; this time, however, bringing peaceful and civilising influences. St. Benedict, from his monastery at Monte Casino, began to push his monks northwards into Lombardy, and thence over the Alps. These monks brought with them Christianity and thieving—thieving not from men but from the gods; for chief among the traditions of the early Christian builders was that which prescribed as fair game and quarry any pagan building from which they could get materials for their own. Retaining the Basilican plan, they still kept to classic methods of construction and detail, using columns of different shapes and sizes, or capitals where they could get no columns, to build boldly into their churches. Thus in Burgundy, as in other parts of the south and south-east of France, we get a strange mixture, the classical feeling of which is so marked in such churches as those at Alet, Tournus, or Vézelay.

Burgundy, perhaps because it afforded convenient and fruitful country as near headquarters as possible upon this side the Alps, became from the first the centre of monasticism in France, and there rose during the eleventh, twelfth, and thirteenth centuries a series of ecclesiastical buildings, larger and almost of more importance than any other series of their kind in France, or, indeed, in Western Europe. After that time, as elsewhere, churches of the larger size rose more commonly above the episcopal palace than the abbot's lodging, representing communal rather than monastic religion; and the monks, having fulfilled their mission, saw their great power depart and their place taken by the universities and the bishops. Such cathedrals as Sens, Auxerre, and Troyes became the monuments of their times, as Cluny, Romainmotier, Tournus, Vézelay, Pontigny, Cîteaux, Fontenay, and many other abbeys had been of theirs.

The general arrangement of the Burgundian church calls for little comment except in one particular. The village churches, with their white walls and red roofs, are simple buildings, often without aisles, but generally having a semicircular apse. The more important churches have generally a crypt, and often a lady-chapel, as described later. The crypt, which took the place of the martyr's tomb under the tribune or apse of the Italian basilica, is, of course, a common heritage in Western Europe, but those in Burgundy are often of early date, and of the type found at Saint-Denis, near Paris. That at Saint-Germain, Auxerre, is

particularly interesting, forming an underground church, built in the ninth century, with central chapel surrounded by an ambulatory, the columns of which are exceedingly classical in detail, with Ionic volutes for capitals, and quaint frescoes and carvings; while at Saint-Bénigne, at Dijon, was found a unique development in the tomb of the saint, with its four-storeyed circular chapel, illustrated in Viollet-Le-Duc's *Dictionnaire* and Sommerard's *Arts du Moyen Age*.

Having made mention of Saint-Bénigne, Dijon, it may be worth while perhaps, for the sake of those who may not have studied this part of French architectural history, to describe it shortly, since it has not only the distinction of standing alone in Western Europe, but also of having formed the foundation of a theory. It is no longer in existence, so I cannot speak to it from personal knowledge, but the authorities are sufficiently good to show that it was a three-storeyed circular chapel, built apparently upon the model of the Holy Sepulchre at Jerusalem, with a central circular nave surrounded by vaulted galleries at the levels of the crypt, the choir, and the triforium. It thus formed a great apsidal chapel, as seen from the church, from which it was separated only by a ring of columns: it was lighted, like the Pantheon, from a circular eye above the well. Opening out of the rotunda towards the eastern end was the vault which contained the remains of St. Bénigne, which were visited by such numbers of pilgrims as to make it necessary to erect this great circular chapel for their accommodation. Fergusson \* gives the plan, and holds that the idea of the *chevet* was taken from this arrangement.

The feature, however, to which I want to draw particular attention and to devote some space is the narthex, or penitents' porch, as it has been called, which became a most important part of the Burgundian abbey. These porches are placed always at the west end of the monastery church, and are of two storeys, forming apparently the façade of the church, and consisting generally of a gable flanked by two towers (the two storeys), and one or three doors entering the ground floor. They form, in fact, two storeyed churches in advance of the nave, each floor vaulted with its nave and aisles, except where the nave is carried up to the roof with galleries round, as at Vézelay. The porch communicates with the church proper by one or three doors, and on the upper floor is an altar placed in a balcony open to both church and narthex. From this point congregations in nave and narthex could be addressed.

The idea is, I suppose, derived from the narthex of the Romanesque basilicas and Byzantine churches, and was brought by the monks from their Italian homes, to serve the same purposes as of old—that is, for the use of penitents who might not enter the church—though, as time went on and the size and magnificence of the abbey increased, the narthex too developed, and no doubt served other purposes as well.

Mr. William White, F.S.A., in a Paper read some years ago,† held that the celebrated galilee at Durham was erected as the Consistory Court of the Bishop. Instances of the single-storey narthex occur too in Burgundy; and the beautiful little church at Saint-Père-sous-Vézelay has one which bears a certain similarity to the Durham porch, though it is of much later date than the times of Bishop Pudsey or Thomas-à-Becket, who spent some time at Vézelay. Still, in their days, civil and military connection with Burgundy was close, and ecclesiastical visits to this part of France, both voluntary and compulsory, were not

\* *History of Architecture* (1893 edit.), vol. ii. p. 75.

† See TRANSACTIONS, Vol. VI. N.S. p. 141: "The Galilee of Durham Cathedral: its Name and Nature," by William White [F.], F.S.A. See also, pp. 153-164 (foot-note), a description of the objects and orthodox uses of the western porch or ante-nave of the Abbey-Church of

Vézelay; of the Church of Paray-le-Monial, near Autun; of the Church of Pontigny, near Auxerre; of the Church of Romainmotier; and of churches in Italy, Spain, and Central Syria—all illustrated with plans, sections, elevations, &c.—by the Editor [Sec. R.I.B.A.] of the TRANSACTIONS.



infrequent; so that, whatever the precise purpose for which our English example was built, its conception may well have been based upon the Cluniac narthex, which may also have been used for secular purposes connected with monastic government. But the disposition and size of such adjuncts to the church as are found at Cluny, Romainmotier, Vézelay, or Tournus show that the primary motive was that of a porch, so large, however, that they must have served some ulterior object. It is probable, as I have said, that they were reserved for penitents; and it is possible that the upper part with its altar may have taken the place of the *eso-narthex* of the Romanesque basilica, while such buildings would be convenient when a king and his court, or nobles and their vassals, sought the hospitality of a monastery, or pilgrims resorted there in too great numbers to be admitted in a body to the shrine. It is noticeable that the Cluniac order, marked during the eleventh and twelfth centuries for the grandeur of their homes and luxury of their life, almost invariably attached such porches to their larger churches, while the Cistercians—reformed Cluniacs—reverting as they did to greater simplicity in details and habits, constructed theirs more nearly upon the long and narrow Italian or Byzantine type, as was seen in the Abbey of Clairvaux, of which a plan is given in Viollet-Le-Duc's *Dictionnaire*.

An early and interesting example of the Swiss Burgundian church is found at the little village of Romainmotier—a building well known to all who have studied the architecture of the Canton de Vaud. Many will remember the journey through the Jura to Lausanne, and the descent through the Valley of the Orbe. The train has almost left the hills when it stops at the roadside station of Croy, whence a quarter of an hour's walk brings you to a village whose quaint picturesque street nestles about the stream, with the mountains and pine-woods overhanging it. This is Romainmotier. A gateway leads through the belt of houses into a large courtyard, in which are some remnants of an old Benedictine monastery, with its church heavy and massive, and evidently—with the exception of a graceful porch of the thirteenth and a square east end of the fourteenth century—of great age.

As to the date of the church there is no absolute certainty. The monks are said to have settled here in the seventh century, and the date given for the completion of the church is 753. If this be correct, we have a genuine Carolingian church, with choir, nave, and narthex complete, the latter being later in date than the original church, and the choir altered from the original plan, which probably had three apses instead of the present square end. The narthex here is quite typical—rude in appearance, with very small windows, and attached pilasters of classical character terminating under the eaves-course. Its original form is now altered internally, the arcades being walled up, so that the church is entered by a passage, and the side aisles make excellent stores for the village chemist. Externally, with the exception of the later porch and some massive buttresses, it looks almost more ancient than the church, whose picturesque mass, its decoration reminding one of the Rhenish churches, is crowned by a square tower at the crossing, with glass tiled spire. Internally, the nave arcade consists of the rudest of circular columns, their capitals just chamfered from the square at the angles, carrying arches with square soffits. Under the crossing is a dome carried on pendentives. A reminiscence of Classical or Byzantine work and Roman influence is clearly visible in two columns of curious form which stand on either side of the choir; their capitals so closely resemble those of the Corinthian order that, if they were not stolen from some pagan building—the place was of course a Roman station, and boasts remains of the imperial occupation—they were copied from Classical models. The church is indeed typically Burgundian in most respects, and of a very early date, though the original roof has been replaced by a stone vault carried on corbelled vaulting shafts, and its original eastern termination altered.

In many of the early churches we have another reminiscence of Classical times in the columns. They are not piers, but monolithic columns, a construction which was even continued into later periods, as in the thirteenth-century choir at Vézelay, and the Lady Chapel at Auxerre. The nave arcade at Tournus is a good example again, with capitals of a primitive description; indeed, the whole church has interesting features, and comes early in the list of Burgundian churches, having been begun in 1009. Here, again, we have a most complete double-storeyed narthex, illustrated in Sommerard's *Arts du Moyen Age*, and a curious system of vaulting: the nave is divided by longitudinal and cross arches into square compartments, each of which is roofed by a barrel-vault thrown across it in the direction of the length of the church.

Of Cluny itself, the mother abbey of the great Burgundian monastic system, as indeed of that of France before St. Bernard came upon the scene, this is no place to speak, since scarcely a trace of it is left, though I can show one or two views of it from old prints, and a restoration of its huge church and dependent town, with lines of encircling walls and towers. But we have no bad substitute to study in the church at Vézelay, of which a careful examination should be made.

At La Roche, a junction about half-way between Paris and Dijon, one takes train on the line to Auxerre and Avallon. It trails its long length through the undulating vine-clad hills, crossing and recrossing the brown-red waters of the Cure, on the banks of which cluster the white villages with their red roofs, and picturesque bridges, and whispering poplars, until the little station of Sermizelles is reached. Here the diligence may arrive some time to take you back to Vézelay, six miles off. The town, when once you get on the way, is always before you on the summit of an abrupt hill, projecting like a headland into the valley; and as you fare slowly along its girdle of walls and trees, its houses jostling one another above them, and the long low roof and towers of the church crowning all, are clearly discernible for miles. Once there, you ascend the narrow hilly street, until you stand



FIG. 1.—A TYPICAL BURGUNDIAN STAIRCASE, TOUR GAILLON, VÉZELAY.

in the *place* before the church. The first feeling is, perhaps, one of disappointment—perhaps, also, of desolation—mixed with curiosity roused by the unusual air given to the front by the arched finish of the central compartment, which surmounts the Romanesque doors. This upper part, of thirteenth-century date, surrounded by the earlier work, and its long lancet-windows and niches, are enclosed by an arch whose abutment is the flanking towers. Ordinarily, one would expect a surmounting gable; but this is wanting: the arch takes its place, and is finished with a cross. Perhaps some other termination once existed; the intention seems to have been to underpin the towers, or pull them down, and carry the thirteenth-century arcade to the full width of the church: for before Viollet-Le-Duc began the restoration the arcade was carried



under each tower to the extent of half an arch, and the older masonry left broken off. This is shown by an interesting plate in Sommerard's book. The restorer, however, covered them up with flat pilasters in the manner of the earlier work.



FIG. 2.—TRANSEPTAL TOWER, VÉZELAY.

With the exception of this central compartment and of the choir, the church has the massive, reposeful, almost barbaric characteristics of the early Burgundian Cluniac style. Long and spreading, with small high windows, and great flat arched buttresses spanning the aisle roofs, its exterior, in spite of the beautiful transeptal tower that remains [fig. 2], and picturesque southern cloister, hardly prepares one for the magnificent interior. You may enter by a small door into the narthex [fig. 3]—the most interesting building of its kind in existence. As lofty as the church itself, it forms a great ante-chapel with nave and aisles, three bays in each direction; the arcades left and right, *pointed*, and carrying galleries over the vaulting of the aisles. A broader gallery along the wall of the church itself, the width of the eastern bay, contains the altar of which mention has been made in

general description, and is carried by a bold *round* arch; and, as there is no corresponding western gallery, the central nave is carried up two storeys to the vaults, again carried by pointed arches. In the church itself—or its earlier parts—there are no pointed arches. Here they are used constructively, while those that carry no loads or are merely ornamental are round arch, as usual in these times. This is one of the earliest, if not the earliest building in which the pointed arch is used in this manner.

The carving that faces you round and over the great central doors of the church, with their fine wrought-iron hinges, is probably such as is to be found nowhere else. Bold in relief, severe and Byzantine in character, it tells the old stories in which saints, and angels, and devils do their work, with representations of Our Lord in the Tympanum, and St. John on the “trumeau,” for the central figures—the latter unrestored. The architectural ornament in capitals and pateræ, and the forms of the shafts, are essentially Classical in feeling, and the whole forms a typically Burgundian composition.



FIG. 3.—THE NARTHEX, VÉZELAY.

As the doors roll open an astonishing sight bursts upon one—a dim nave with massive semicircular cradle roof, into which the sun shines through small clerestory windows in slanting pencils of light upon serried lines of quaint sculptured capitals—a nave so long that floor and vault seem likely to meet in the far-off burst of light that floods the choir: the addition of the latter in the thirteenth century, to replace the older one destroyed by fire, seems a triumph of art. The Roman vault is still adhered to, depending more upon the coherence of its materials than

upon carefully calculated thrusts and building up: it is carried by strongly marked ribs springing from vaulting shafts, whose voussoirs, alternately dark and light, remind one strongly of the marble-work of Italy--colour not entirely due to difference in the stone, but helped by art.

The history of the church dates from the time when the monks were burnt out of their home at Saint-Père, which is to be seen from the lime-shadowed terrace by the church. The village clusters round its church-tower down in the valley. The first church on the hill was built in the ninth century, and parts of it are incorporated in the existing church, begun in the eleventh and partly burnt in the twelfth. The narthex was completed in the beginning of the twelfth century, and the choir rebuilt in 1206. At this time the abbey was one of the richest and most powerful in France, and saw stirring events. It was here that St. Bernard, having travelled from his own abbey of Clairvaux, preached the Second Crusade, and that Louis VII. took the Cross. It was here, in 1187, that Philip Augustus met our own Richard I., and hence that the united French and English armies started for the East. Here, too, St. Louis, the most beautiful kingly figure of ancient or modern times, knelt to receive the Sacrament before he took the road upon that last and most ill-fated expedition in defence of the Cross.

The great struggle of the twelfth century between the people and their overlords had a different event here from that which in most places released the people from the rule of their feudal superiors; and, though it ended in successful revolt and temporary establishment of the commune, the people were soon reduced to obedience by the powerful abbot and his friends, and the town once more resumed its monastic aspect. The fortifications, which still form a ring round the abbey and town, prevented the English from attempting its capture, and balked the marauders, who during the fourteenth and fifteenth centuries infested the country, of a rich prize; but nothing was proof here, as elsewhere, against the iconoclastic zeal of internal hatred, and the Huguenots despoiled the church of some of its finest features. In 1840 a new enemy in the form of the restorer took the church in hand: every stone has been rechiselled, every carving bears the marks of nineteenth-century hands, and the rich chapter-house looks new, as though it had been completed yesterday.

Though I have taken the Vézelay church as typical of the older Burgundian style, we need not leave it to find a good example of later methods. The choir is of most refined and complete early Pointed work, still retaining much of the breadth of the twelfth century, but contrasting with it in constructive methods, in balance of vault and pier, lighter supports and clustered shafts, in the lightness of its simple untraciated clerestory windows, and the introduction of a triforium. Built more or less upon the old plan, with its crown of chapels, it still retains its monolithic shafts. In proportion and disposition of parts it is a most perfect example.

Among many monuments anterior to the introduction of the Pointed style is the finest



FIG. 4.—TOWER, SAINT-GERMAIN, AUXERRE.



bell-tower in Burgundy, at the church of Saint-Germain, Auxerre [fig. 4], remarkable for its combination of sturdy strength and elegance, for the admirable disposition of its solids and voids, and for the treatment of its higher portions in the change from the square to the octagonal belfry and roof. It stands alone and solitary, watching the growth of later generations, with one companion of its own age above ground in the interesting church of Saint-Eusèbe, which contains, however, marks of nearly all styles.

Of the thirteenth century, Notre-Dame at Dijon is perhaps the purest example in Burgundy, but too well known to need description; and of a somewhat later epoch the cathedral of Auxerre—Saint-Étienne—is hard to beat. Finely situated above the winding Yonne, with its bridges and barges and river-side life entirely typical of France, it stands almost its whole height clear of the houses on the sloping hill-side, its red-tiled roof contrasting with the mellow stone from Tonnerre that forms walls and buttresses—stone so rich in colour and beautiful in texture that its figure-crowded doors might be carved in old ivory.

The spirit of the place was caught by Walter Pater in the quaint legendary account of the cathedral building in his "Imaginary Portrait" of Denys de l'Auxerrois. The building was begun in the early days of the thirteenth century, but lingered long in completion; it was the fourteenth century that saw the completion of its nave, and the sixteenth before the one western tower—only one stands above the eaves—had its last stone laid.

Its commencement coincides almost with that of Salisbury and Amiens, and both Salisbury and Auxerre possess lady-chapels equally characteristic of their respective countries. The French example is built, as is common in Burgundy, so as to appear from the outside almost a detached building, with hipped tiled roof. It is entered from a dim sober choir, surrounded by rich glass, much of it dating from the thirteenth century—a treasure-house for the student of colour, here sparkling and jewel-like in effect, there sombre and dark. Here the columns and vaulting shafts are of the slightest, reduced to marvellously delicate proportions, and the qualities of the strong stone are tried to the utmost, especially in the two shafts that carry the vaulting across the opening into the lady-chapel [fig. 5]. These are in long stones—two only, I think, in the great height. The springing of the groins is of the most hardy construction, and the difference in the ribs spanning the smaller and wider spaces is cleverly treated by small vertical shafts, whose capitals are at the higher level. The carving throughout indicates the confidence placed by the thirteenth-century masons in the material they used, and, though this confidence has carried them to the utmost limit, I can see no appearance of weakness in this most beautiful work. In the geometrical tracery-work of the exterior, and in the carving and tracery of the windows, the same features are discernible; but the nave is massive, and with its long shafts reminds one rather of Winchester.

Below Vézelay there is another very beautiful church of the thirteenth century—that of Saint-Père-sous-Vézelay, built by the monks. It is but a small building, and yet one of the most perfect of its kind, containing all the essential parts of a church of the most complete



FIG. 5.—LADY CHAPEL, SAINT-ÉTIENNE, AUXERRE.

character. Its vault is supported by flying-buttresses of the same kind as are found at Vézelay. One very beautiful tower is completed at the west end, and a cathedral-like effect has been here attempted by the somewhat questionable expedient of carrying the central gable high above the roof as a screen with sculptured front. It struck me that perhaps the arched form of the west end of the church at Vézelay itself may have been treated, or intended to be treated, in a similar manner. Saint-Père also possesses a very remarkable one-storey narthex, with open-traceried windows, and three doors. It is of late fourteenth-century date, and some of the work is very good. It contains a good raised tomb, and inside the church is an interesting wall-tomb, illustrated by Viollet-Le-Duc.



9, CONDUIT STREET, LONDON, W., 5th March 1896.

## CHRONICLE.

### THE THREE PRIZE ESSAYS.

#### The Influence of Material on Architecture.\*

Mr. Frank Granger [A.], D.Litt.Lond., having been asked to peruse the three Essays which were placed respectively first, second, and third by the judges, and to do so with a view to criticising their construction and composition, has kindly sent the following contribution:—

I have read the essays sent in under the mottoes "A Priori," "Conditioned," and "John Bull." It is very easy for one who has not attempted the task of composing an essay upon the above subject to be captious; but I must confess that none of the three essay writers seem to me to have been entirely successful in their method of approaching the task imposed upon them. "A Priori" shows abundant acquaintance with the history of architecture, and has collected the facts upon which an essay should be based. But he has written a history rather than an essay. He has set out to describe the whole course of architectural development, and has thus sacrificed the systematic handling of his subject to the convenience of a vague historical summary. "John Bull" has not fettered himself by a purely historical procedure, and has at least made the attempt towards a methodical treatment. Yet if we glance down

the synopsis he has given, we miss, so to speak, a backbone; here are "scattered limbs," but where is the living body closely framed together? "Conditioned," if he will forgive the remark, seems to have been under a mystic inspiration when he began to pen his essay. The stream of his invention, if I may adapt the figure which adorns his first paragraph, flows along "amid banks of its own creation." At times he reminds himself that his essay should be directed to the prescribed subject, but this is only for a moment. "Some jutting rock it (the stream) has unearthed may turn it awhile aside, but with 'the gathered impetus of some long reach it curves deep into the opposing headland.'" We have all felt like this at times. Yet a rap on the knuckles from our schoolmaster, Experience, comes to remind us that the business of the world is not carried on by dithyrambs; nor for that matter is the writing of an essay. Mark Twain said that a plain fact was better than a valentine. It should certainly take precedence of fine language.

When Mr. Ruskin is called upon, in the fulness of time, to give an account of himself and his deeds, he will have something to answer for in the effect of his architectural works upon the minds of his readers. He has turned most of us for a while into barrel organs, as it were, reeling off the melodies of *The Seven Lamps of Architecture* and *The Stones of Venice*. This is a personal and private confession of my own, and is not intended to apply to the authors of the three essays. Yet we should be unjust to Mr. Ruskin if we lost sight of the reasonableness and order of his exposition in the occasional brilliancy of his perorations. But his imitators, like others of their tribe, fasten upon his mannerisms, and caricature them. His rhetoric is effective, first, because it has a backing of solid study; secondly, because it is used with a certain reserve. With these explanations I shall not be misunderstood, I hope, if I refer to certain parts of *The Stones of Venice* and to *The Seven Lamps* as illustrating the rules to be followed in composing an essay on architecture. They are characterised by the way in which buildings and details of the most different styles and ages are brought together to emphasise an analogy or to mark a distinction. And, further, each part of the

\* Essays under mottoes "A Priori" (Banister F. Fletcher [A.], awarded the Institute Silver Medal and Twenty-five Guineas), "Conditioned" (J. J. Cresswell [A.]), and "John Bull" (E. A. Jollye).



subject so treated helps to accumulate the proofs which in their total effect are so convincing. Thus it appears that these writings, which outwardly are poetic and vividly coloured, are yet of the same school with other and more sober architectural classics—Willis's essay on "Vaulting," for example. Their high reputation depends chiefly upon skilled insight, a wide survey, clear and orderly expression.

It seems to me that the theme laid before the competitors for the Essay Medal admits of a precise delimitation. The influence exercised by building materials upon architectural design is only one among a number of influences. Precedent, backed up by the sanctions of religion; national taste; the originality of the individual—all these co-operate in the formation of what we know as style. These obvious considerations would prevent us from saying with "A Priori" that the style "is created out of the qualities of the materials that have to be employed." It is not so much narrowness of view as confusion of thought that must be laid to the charge of "Conditioned," who treats rather of the imitation in one material, of the constructions appropriate to another, than of the constructions and ornaments suitable to each kind of material. The considerations which he raises would have their place when the more immediate topic had been dealt with.

The quotation I have made just above from "A Priori" may serve to illustrate a certain awkwardness of expression, the grounds of which are worth a moment's thought. This awkwardness is a fault that assails almost all who set about English composition. One seeks in vain for the lucidity which the best French writers know so well how to give to their work. For our modern English vocabulary, with its manifold names for each act and attitude of thought, is an instrument not without its perils. Words like "principle," "condition," "development," and the rest of the philosophic slang of the day are absolutely without meaning in nine cases out of ten in current literature, and indicate the poverty of thought they are used to conceal. Let us leave this word-mongering to the regular merchants in words. It is the privilege of the architect that his business is with things. "My friends," said Mr. Pecksniff, "my duty is to build, not speak; to act, not talk; to deal with marble, stone, and brick, not language." Although we may find it hard to forgive Dickens for his caricature, we may accept this much from him. Of all others the architect has least excuse for allowing his pen to run away with him.

Let an architect write on other topics with the sense of responsibility that he brings to his specifications; with the care which he has then in view of the speedy translation of his words into realities; with the clearness that is needful to avoid misinterpretations; with the system and comprehensiveness by which he ensures that

nothing is left out, and that everything is mentioned in the right place and not more than once; and he will find that his daily work affords him a school of composition that excels all the schools of rhetoric.

On looking over what I have written, I begin to fear that I have not acknowledged sufficiently the various merits which attach to the three essays. Unfortunately, they were not the qualities which seemed of first necessity. There is some clever draughtsmanship, and there are many striking suggestions. But even these do not make up the ideal essay. However, the writers have this solid consolation and undoubted superiority as against their critic, they have written essays about "The Influence of Material upon Architecture," and he has not.

*Nottingham.*

#### The late Lord Leighton, P.R.A.

Pursuant to the Resolution passed by the General Meeting of the 3rd ult., a letter was addressed on the 7th ult. to Mr. Eaton, Secretary of the Royal Academy of Arts, as follows:—

SIR,—At a General Meeting of the Royal Institute of British Architects, held Monday the 3rd inst., allusion was made to the mournful ceremony at which the President and other representatives of the Institute had that day assisted; and a Resolution of condolence was passed, which it is our duty to forward, in respect to the late Lord Leighton, President of the Royal Academy of Arts, one of the twelve Honorary Fellows of this Body, and the recipient, in 1894, of the Royal Gold Medal for Architecture.

We are to offer to your Council an expression of the sorrowful regret felt by the Royal Institute of British Architects for the loss sustained by the Royal Academy in Lord Leighton's death; and we venture to transmit, with this letter, a copy of our JOURNAL, published yesterday, which contains more than one reference to the great Master that the Institute, in common with the Academy, has lost.—We have the honour to be, Sir, your obedient Servants, W. EMERSON, *Hon. Secretary*; WILLIAM H. WHITE, *Secretary*.

In the reply, dated 20th ult., the Secretary of the Royal Academy wrote:—"I am desired by the Council to express the grateful thanks of the Royal Academy for the kind message of sympathy and condolence which has been received from the Royal Institute of British Architects on the occasion of the sad loss sustained by the Royal Academy through the lamented death of Lord Leighton of Stretton, its highly gifted and distinguished President."

Both letters were brought up at the Business General Meeting of the 2nd inst., and duly read.

#### The President's approaching Departure for Athens.

At the conclusion of the Business General Meeting of Monday the 2nd inst. the President announced that he should be absent from England for a period of about two months, and consequently unable to preside at the next few Meetings of the Institute. On the 10th inst. he leaves for Athens to take up his duties there as one of the three

members of the International Commission of Architects appointed by the Government of Greece to inspect and report upon the repairs required at the Parthenon in consequence of the earthquake of 1894. The President went on to say that he felt it a great honour to have been selected to serve on the Commission. At present he had very little information on the matter, and could not enter into particulars; but on his return he hoped to have the pleasure of communicating to the Institute the result of his observations. He trusted, however, that nothing would be done to alter the appearance of the Parthenon so well known to them all. The President's colleagues on the Commission are Dr. Josef Durm, of Carlsruhe, and Monsieur Magne.

#### Meeting and Dinner at Manchester.

The Council, acting on suggestions received from various quarters, have decided that for the future there shall be an Annual Dinner of the Institute, and that such Dinner shall occasionally be held in one of the principal provincial centres. This year they propose—in concert with the Manchester Society of Architects—to hold a Meeting and Dinner at Manchester. The exact date is not yet fixed, but it will probably be about the 20th May. It is arranged that the Meeting shall take place in the rooms of the local Society at 3 o'clock in the afternoon, and the Dinner in the evening. The President, Mr. Penrose, will take the chair. It is hoped that a large number of members will support the President on this occasion, and it is desirable, in order that the requisite arrangements may be made, that gentlemen intending to be present should send in their names to The Secretary R.I.B.A., at 9, Conduit Street, W., during the present month. The price of the dinner ticket for members is 25s., and each member may bring a guest, the price of the guest's ticket being 30s.

#### Mr. Arthur Cates's Retirement from the Chairmanship of the Board of Examiners (Architecture).

The news of Mr. Arthur Cates's impending resignation of the Chairmanship of the Board of Examiners—which is unfortunately rendered necessary by prudential reasons of health—will be received with feelings of great regret, not only by his present colleagues on the Board, but by every member of the Institute. None but those who have worked with him can thoroughly appreciate the unflagging energy, foresight, and resourcefulness which he has invariably displayed in a most laborious and somewhat difficult position; but there are many more who must retain grateful recollections of his genuine sympathy and constant willingness to help. Coming, as this news does, on the eve of publication, it is impossible at the moment to pay adequate tribute to Mr. Cates's long and invaluable services to the cause of architectural education; but the hope may be expressed that, even when deprived of his active leadership, the

Board of Examiners may long enjoy the advantage of his experience and counsel.

The part borne by Mr. Cates in the initiation and development of the scheme of progressive examination is well known, and has already been recorded in these pages.\* For forty-one years he has devoted his time and labour to the furtherance of this scheme, and the firm basis upon which it is now established is undeniably due to his untiring effort in its behalf.

Mr. Cates advises the members of the Board of Examiners of his contemplated retirement in the following letter, which bears the date 29th February:—

MY DEAR COLLEAGUES,—It is now fifteen years since this Board of Examiners was constituted to conduct the Obligatory Examination under the old By-law XIV., which, after some years of effort and controversy, was passed in 1877, and provided that every candidate for election as an Associate should, after May 1882, be required to pass an examination according to a standard to be fixed from time to time by the Council.

Year by year you have honoured me by electing me as your Chairman, and have individually and collectively given unfailing aid to developing and perfecting the examination.

Gradually but surely the standard of requirements has been raised, and the educational influence of the examination extended, until it has become an important factor in the education of the young architect.

The complete system of Progressive Examinations, which was shadowed forth in the Memorial of the Architectural Association addressed to the Institute in 1855, is now firmly established, and affords in a thorough manner to students of architecture that guidance in preparation for entrance upon their articles, in their studies during the period of their sojourn in an office, and in the critical interval from the completion of their articles to the moment of commencing practice, the absence of which was so much deplored by the memorialists.

For the last two years I have felt very severely the strain caused by endeavouring to carry out as thoroughly as I could wish the duties of your Chairman, and I am now advised that I may not continue to undertake the duty. Although strongly urged in the past and preceding years to do so, I was unwilling to withdraw until the complete system of Progressive Examinations was in full operation. This system being now well established, and the routine definitely arranged, I intend to avail myself of the reappointment of the Board in May next to then retire from it.

\* See sundry references in the Historical Sketch of the Examinations which appeared in the JOURNAL, Vol. II. 3rd Series, p. 137; and especially a supplementary article to the above, written by Mr. Cates himself, *ibid.* p. 188.



You will, I am sure, understand that I take this course only under the irresistible pressure I have referred to, and with exceeding great regret, not less in breaking off the long connection with colleagues, to whose uniform kindness and consideration I am deeply indebted for aiding in the realisation of the idea which more than forty years ago I had formed for influencing and improving the education of the youthful aspirant in architecture, than in quitting the position in which you annually so kindly placed me, wherein I could guide your deliberations and in some degree influence you in favour of the project which has been so dear to me.

I have thought it well to give you this early intimation of my intention to retire from the Board, in order that you may have ample time to make the necessary arrangements for the Summer Examinations; and I venture to take the opportunity to offer a caution, that you should not aim at attaining the unattainable perfection, but be content for some years at least to work on the present programme, avoiding the introduction of changes which are not absolutely essential.

I cannot conclude this communication without expressing in the most hearty terms the great obligation which I feel to Mr. Herbert G. Tayler, who from an early period has acted as clerk to the Board, and has performed his duties with an assiduity, promptness, and mastery of detail which have much contributed towards the smooth working of the business. You have in him a most valuable and indefatigable assistant, whose excellent service you, I am sure, appreciate and recognise.

Wishing to you all, individually and collectively, complete success in carrying forward the examinations with prosperity not less than has hitherto attended them, and assuring you that I shall ever continue to take a lively interest in your work,—

I am, yours very truly,

ARTHUR CATES.

This letter was read at the Council meeting of Monday, 2nd March, and upon the motion of the Hon. Secretary the following resolution was unanimously agreed to:—"That the Council have learned with deep regret of Mr. Arthur Cates's intended resignation of the Chairmanship of the Board of Examiners (Architecture), a post he has held uninterruptedly since the year 1882, and which he is now compelled to relinquish for reasons of health; and they desire to record on the Minutes their sense of the great services rendered by him in connection with the Examinations, with which he has been identified since 1877, and first contemplated in the form now established as long ago as 1855."

**New Notice Forms &c. for use under the London Building Act, Part VIII.**

Members resident in the United Kingdom receive with the present number of the JOURNAL

copies of a series of Forms which have been prepared for use under certain sections of the London Building Act 1894, Part VIII., "Rights of Building and Adjoining Owners." These Forms are the work of the Practice Standing Committee, who undertook their preparation in consequence of the London County Council's determination to furnish such Forms only as were required by officials under the new Act, and to leave individual owners to prepare their own notices for use among themselves. The five Forms, distinguished by the letters A, B, C, D, and E, have been approved by the Council of the Institute, and are now published under its authority. A brief description here follows:—

"Form A" is a notice in respect of party structures referred to in Part VIII. of the Act, sections 88 to 92.

"Form B" is a notice of intention to build within ten feet of and at a lower level than an adjoining owner's building, and applies to section 93.

"Form C" is a notice of intention to erect an external wall with footings projecting into an adjoining owner's premises, and relates to section 87, sub-sections 5 and 6.

"Form D" is a notice required when it is proposed to build a party-wall on the line of junction of adjoining lands (section 87, sub-sections 1, 2, and 3). It will be observed that such a wall can only be built with the consent of the adjoining owner, and differs in this respect from work which a building owner has the right to execute.

On the back of Forms A, B, C, and D, definitions and notes applicable to the particular notice are given, and these will be found very valuable as a guide in filling up the Forms.

"Form E" is for the appointment of a third surveyor under section 91. It is very desirable that there should be uniformity of practice in such appointments, and this Form will, it is hoped, be found very useful.

The rights of the Institute in the Forms have been secured, and copies printed on hand-made paper may be obtained at the office, 9, Conduit Street, W., price 3*d.* each; postage extra.

#### **The Form of Agreement and Schedule of Conditions for Building Contracts.**

It may not be out of place at the moment to refer to another Institute publication, the outcome of the labours of the Practice Standing Committee—viz. the Form of Agreement and Schedule of Conditions for Building Contracts. It will be satisfactory to the general body, and gratifying to the members of the Committee, to learn that this document is in large request. Sales have been considerable since its issue last July, and the demand steadily increases. When the advantages of its use become more widely known it is not too much to anticipate that its general adoption will follow. A reprint on paper of larger size and

superior quality is in the press, and, in future, copies will be issued flat, or rolled for despatch by post.

#### The Architects' Benevolent Society.

The Forty-sixth Annual General Meeting of the Architects' Benevolent Society will be held in the rooms of the Institute at 5 p.m. on Wednesday, the 11th inst., when all contributors are requested to attend to receive the Report, Balance-sheet, &c., for the past year, and to elect the Council and officers for the ensuing year of office. Subscribers who have not yet paid their subscriptions are reminded that they are due on the 1st January in each year. Fresh contributions and annual subscriptions are earnestly solicited.

#### Additions to the Library.

The author, Professor Henry Robinson, has presented his recently published work, *Sewerage and Sewage Disposal*, in which he gives a concise summary of the most important data with regard to water supply, sewerage, and sewage disposal, which of late years have become available through the researches of chemists and biologists [London: E. & F. N. Spon].

*Constantinople, Ancient and Modern, with Excursions to the Shores and Islands of the Archipelago and to the Troad*, by James Dallaway [London, 1797]; *Travels in Crete*, by Robert Pashley [London: John Murray, 1837]; and *An Excursion in the Peloponnesus in the year 1858*, by the late Right Hon. Sir Thomas Wyse, edited by his niece, Winifrede M. Wyse [London: Day & Son, 1865], have been purchased for the Reference Library.

Mr. Charles Gourlay [A.] has forwarded a copy of a lecture delivered by him before the Architectural Section of the Philosophical Society of Glasgow on "The Teaching of Architecture in the Glasgow and West of Scotland Technical College," which has been printed for private circulation; and from Mr. Barr Ferree [*Hon. Corr. M.*] has been received a paper reprinted from the *Journal* of the Franklin Institute, entitled "The Modern Office Building," the largest and most costly structures, according to the author, being erected in America at the present time.

Mr. C. E. Savery has presented the second edition of his *Short History of Church Architecture in England from the Earliest to the Present Time* [London: J. Masters & Co.].

The third edition of Burdett's *Cottage Hospitals*, brought down to date and with much new matter, has been added to the Loan Collection.

#### Indexes of Building Journals.

The Librarian wishes to obtain Title-page and Index of *The Architect*, vol. xxviii. (July-December 1882), to complete a set for binding separate. A similar volume of those from *The Builder* was

some time ago made up, and has been found of great convenience and use for reference by readers.

It is also intended to make up index-volumes for *The Building News* and *The British Architect*. Of the former, the Titles and Indexes from vol. xlv. (July-December 1883) inclusive up to date; and of the latter, those from vol. xv. (January-June 1881) inclusive up to date, are already in hand. The Librarian will gladly welcome donations of the whole or a portion of those of *The Building News*, vols. i. to xlv., or those of *The British Architect*, vols. i. to xiv.

## NOTES, QUERIES, AND REPLIES.

### MR. PHENÉ SPIERS'S PAPER [p. 233].

#### Saint-Front of Périgueux.

From Professor G. BALDWIN BROWN [*H.A.*], M.A.—

Mr. Phené Spiers's Paper on Saint-Front is important both from the historical and the technical standpoints. In respect to date, De Verneill's theory appears to have been contested from the first both in France and Germany, and was repudiated by Schnaase in the second edition of his *History of the Arts of Form*. Schnaase and others held that the *monasterium* burnt in 1120 was the old (or Latin) church—the word must mean *church*, and not *conventual buildings*, from the fact that women were in it at the time of the fire, and that the domed church was erected after this date. He still, however, held with De Verneill that it was the mother church of the domed group of Western France. Mr. Spiers, in agreement with Dehio and von Bezold, completely disproves this, but he still retains that portion of the older theory which makes St. Mark's at Venice its direct prototype. Mr. Spiers admits that there is some puzzle about this, for he notes the entire absence at Saint-Front of Byzantine influence in matters of decoration, "notwithstanding the singular fact that St. Mark's "was the original model on which it was based." I should be interested to learn how Mr. Spiers is inclined to regard the view put forward by the writers last quoted, in their *Ecclesiastical Architecture of the West*, vol. i. p. 334 ff., that the plan of Saint-Front was not derived from St. Mark's at all, but that it was originally intended to have the form of the Latin cross, and to extend two bays further westwards, so as to cover the whole ground occupied by the old or Latin church. In this case the plan would fall more or less into line with those of Solignac, Souillac, and Angoulême, and a good deal of trouble would be saved. Of course, the extension westwards must have been given up at an early stage of the work, when the tower was substituted, and it must be admitted that there is no direct evidence in favour of the theory in question. On the other hand, we are equally without direct evidence of a borrowing from St. Mark's, which is



in itself not very likely. This church may, as Mr. Spiers remarks, have been "one of the wonders of Europe," but it was such on account of its material and decoration, rather than on account of its plan. To borrow the mere skeleton without *any* of the clothing, which was the most important element in the effect of the whole, must be acknowledged to be a somewhat surprising procedure. To add to the force of this initial unlikelihood, we have at Saint-Front the use of the pointed arch, so often commented on, and we have now in addition Mr. Spiers's new and most interesting demonstration of the non-Byzantine character of the construction of the domes and pendentives of the Aquitanian churches. All this part of the Paper is of the highest value, and should mark a distinct stage of advance in the work of determining what *is* Byzantine and what *is not* in the architecture of Western Europe.

On this latter subject Mr. Spiers is one of our chief authorities, and I would not wish to do more than to suggest a modest query in respect of the view in the note to page 250, that the dome at Aachen is Byzantine. Surely the strong resemblance to San Vitale, as well as the statement of the monk of Saint-Gall, that Charles sent for workmen to help him from all the lands *this side* the sea (*i.e.* not across the sea from Greece), would suggest for Aachen an origin in Italy.

I cannot help saying that I am sorry that Mr. Spiers follows Fergusson in speaking of "France" at the date of about 800 A.D. (p. 255). At that time Aachen, the seat of the Frankish monarch, was every whit as much or as little in "France" as was Germigny-les-Prés in the Loiret—and the dome at Aachen was built before 800. I can only conclude this hasty note by congratulating Mr. Spiers on the accomplishment of a valuable piece of architectural analysis that should attract the attention of Continental scholars.

Edinburgh.

#### The Domes of Aquitaine.

From JOHN S. QUILTER [*F.*].—

Some of the points referred to in the Paper read by Mr. Phené Spiers on 17th February call for more careful consideration than I was able to give in the very limited time available after the reading of the Paper, and as the few remarks I then made do not appear to have been clearly understood, I take this opportunity of expressing more fully what I intended to say.

I do not wish to offer any remarks on what I understand to be the main object of the Paper, which is to disprove the statement made by De Verneilh as to the date of the five-domed church of Saint-Front at Périgueux. This was so fully set out by Edmund Sharpe in his lecture that I need do no more than refer to the very clear epitome of it in the first chapter of the Charente Memorial.

In my remarks at the close of Mr. Spiers's Paper I regretted that he did not refer to

Sharpe's opinion on the subject of the pendentives, and it is on this point that I wish to explain more fully what I intended by my statement that it was "a dome on a dome."

The plans of the earlier Romanesque churches of the district of La Charente were parallelograms with or without aisles, and the covering was by barrel-vaulting. The introduction of the cruciform plan necessitated some different treatment of the space formed by the crossing. The earliest examples of an attempt to construct a dome over this square void is seen at Cellefrouin, Puyperoux, Montbron, and Roulet, where canted angles are formed by squinches, upon which octangular domes were constructed, except in the case of Roulet, where the dome is hemispherical on an octangular base. The next step was to form a circular base for the dome by corbelling out the spandrels beyond the arches. This is shown in its simplest form in the illustration Mr. Spiers has given of St. Stephen's, at Périgueux, which he describes as a pendentive formed on the extrados of the arches; it is also shown more fully developed in many of the churches of La Charente. In order to reduce the corbelling, and to avoid the awkward line formed by the intersection of the arches with the corbelling, it was subsequently found necessary to make the face of the arches raking, so as to bring them into the same plane as the corbelling. This Mr. Spiers has described as a pendentive formed on the intrados of the arches; but the result thus obtained was the formation of the true pendentive, in which the arches became simply perforations in the surface of a dome the diameter of which is equal to the diagonal of the square void. This lower dome was truncated to form a seating for the upper dome, of which the diameter is equal to the side of the same square. A diagonal section of this construction is shown in the illustrations of Fléac, Mouthiers, and Lanville, in which this idea of a dome on a dome is very clearly indicated.

The double curvature of the pendentive, to which Mr. Spiers also alludes, arises simply from the necessity of raising the upper part of the lower dome in order to obviate the apparent weakness of the base of the upper dome coming so close to the apex of the arched perforations in the lower dome. A moulded string was also introduced to mark still more strongly the division between the two domes, and in many instances the projection of this string is increased, so as to form a wide ledge, on which the centering of the upper dome was erected.

The naves and transepts were, in the later examples, covered with similar domes to that at the crossing, and in many cases these were substituted for the original barrel-vaulting, of which the buttresses still remain, as may be seen in the plans of Fléac and Châtres.

The conclusion to be drawn from these observations is that the construction of the domes and

pendentives was worked out step by step by the builders of La Charente, rather than that they were copies of any foreign model; and that the evolution of the dome in the first place was caused by the necessity of covering the space formed by the crossing of two lines of barrel-vaulting, and that the same principle was afterwards extended to the covering of the nave and transepts.

#### Destruction of Buildings.

From JOHN HEBB [*F.*].—

“Les morts vont vite,” says the French proverb; and the same may be said of London buildings, which one by one disappear. Two buildings by the late Mr. John Shaw, on the south side of Fleet Street—the Legal and General Insurance Company’s office, a narrow but cleverly designed front, and Messrs. Hatchard’s shop—will be sought for in vain. Messrs. Colt’s premises in Pall Mall, formerly an insurance office, by the late Mr. Edward I’Anson, and Messrs. Gillett’s premises in Lombard Street by the same architect, have been recently pulled down; and another building in St. Mildred’s Court, Poultry, Mr. I’Anson’s earliest work, is in course of demolition for the purpose of enlarging the London Joint Stock Bank. Mr. R. Norman Shaw’s dainty shop-front at the corner of Great Castle Street, Oxford Street, may be said to have also disappeared, having been so vulgarised that its author would fail to recognise his work.

### REVIEWS. XXXVIII.

(103)

#### RENAISSANCE FANCIES AND STUDIES.

*Renaissance Fancies and Studies, being a Sequel to Euphorion. By Vernon Lee. 8o. Lond. 1895. Price 6s. net. [Messrs. Smith, Elder & Co., 15, Waterloo Place, S.W.]*

This is a volume of “Patristic” lore, if I may so say; the shadow of the regretted Walter Pater lies across every page. Of direct interest for the architect it has not much; nor would a writer who, without show of hesitation, affirms the stone origin of Ionic forms, and dismisses Doric as the survival of a wooden construction, prove other than a blind leader of the blind to her disciples in architecture. Untruths, or half-truths, so positively stated excite a reviewer’s scepticism; but the architect may pay as little heed as he likes to Vernon Lee’s theories on his own art, he will find lights thrown on kindred subjects, some of which may be new to him, and true in themselves. He may, if nothing but “leather” is to his taste, pass over the first four chapters of the “Loves of the Saints,” but as he skims the pages he will be brought suddenly to his bearings when he reads that Art is never reflective of contemporary manners, and that the common hypo-

thesis, which credits painting and architecture with expressing the character and thoughts of their creators, is a pure fallacy. A revolutionary sentiment, indeed! It seems so at first, but, of course, it is as true as its converse, and even more so, and, on reflection, the statement even smacks more of the platitude than the paradox. While art is *growing*, we shall all hasten to admit, its modifications, broadly considered, are not the work of the moment. Evolution moves as stealthily, and withal as irresistibly, as the glacier. Art, it is true, is no more independent of the life around it than the glacier is independent of the seasons, but it is only on the minute details that one can lay one’s finger and say, “Here and here is a sign of the times.”

Are we, then, in perfect accord with our author? Well, there are certain questions which want an answer before we can place ourselves in line with her. Is she, for instance, prepared to deny that the Cathedral at Bourges, so evidently suggesting in its scheme the great Communal Hall, is significant of the change which was taking place at the moment, and, in fact, embodies the lay as opposed to the priestly idea? Again, was Hugo fanciful and nothing more when he paralleled architecture with the printing-press? It could not reasonably be maintained; and the moral appears to be that it is well to state even a truism with reservation, but, with the reservation, a truism it is, and one which it would not have been worth while to dwell upon were it not that this observant amateur, less preoccupied with the mere forms, as such, than the professional architect, has pointed the moral with an aptness of illustration which he, so far as I know, has missed. Religion, when St. Francis came to preach the gospel of love, had come to have its foundation in fear. The Ormuzd and Ahriman of the Zoroastrians, the good and evil spirits of the Manichees, were once again claiming a divided allegiance from distracted worshippers; but while the mind of the craftsman was thus troubled with the workings of a providence which he could not understand, his buildings breathed a spirit of calm and undisturbed faith. The “organic necessities of form,” as Vernon Lee puts it, “result only from the activity and influence of generations of craftsmen”; but if you leave the broad masses for the detail—it is with Lucca, in particular, we are dealing—you will see that all the architectural ornamentation, the somewhat uncouth outgrowth of the disordered imaginations of the day, is composed of “images of deformity and emblems of wickedness”; brute creation everywhere triumphs over man; hostile nature holds him in terrorised subjection; the lions in the porches trample on human beings; in the hunting scenes man is the quarry; round and round he flies in abject terror. Here I believe Vernon Lee to be unassailably true, and this persistence of forms, through a great variety of con-



ditions, was as much a feature of painting as it was of architecture. From Giotto almost to the time of Raphael the traditional treatment of the traditional subject prevails. Every now and then there is an innovator—Signorelli, for instance—but, speaking generally, the grouping of the figures is almost taken for granted; new methods are constantly being tested, new knowledge gained, but the design itself is little more than a medium for experiments in the representation of space, in establishing real relations of distance and light, “in giving the figures real bodies made of real ‘flesh and bone.’” “The work of the fifteenth century does not go beyond filling up the programme indicated by the Giottesques.” The revolution came with the knowledge of perspective and not before. What Hazlitt said had a great deal of truth in it:—“Those arts which depend ‘on individual genius and incommunicable power have always leapt at once from infancy ‘to manhood.’” There are seasons of intellectual convulsion in the life of art when the foundations are laid which shall shape the superstructure for centuries, if not for ever.

The Paper on Greek and Renaissance sculpture is the more interesting that, in the latter case, its association with architecture had so marked an effect on it. The least observant of us must at one time or another have been struck by the depth and abruptness of the gulf which divides the Greek and Tuscan schools, and have asked himself to what it is to be attributed. The individualisms of Greek or Renaissance sculptors are simply as nothing when we compare them with the vital divergences between the schools themselves. Where the Greek loved the rounded contour and the soft shadow, the Tuscan sculptor practised almost a savagery of manipulation. Deep ruts of shadow, exaggerated rugosities, restlessness of pose, were as the apple of his eye. The Greek built up an ideal of manly beauty and clung resolutely to it; Renaissance sculpture, on the other hand, is often beautiful almost in spite of the forms. The heroic figure is loaded in one part and weedy in another. It is essentially human, and therefore imperfect; frequently it is distorted in order to rectify the effects of foreshortening which the position it is intended for will entail. This is the enslavement of sculpture to architecture, the recognition of the fact that it must be subsidiary and decorative when they are associated. To the Greek—I write under correction—this was unknown. It would have offended his keen sense of beauty to aim at anything less than the highest ideal. Wilful distortion would not only have repelled him by its viciousness, it would have been unintelligible. For him sculpture always stood on its own merits, and its services to architecture were those of an equal, not a dependent.

One cannot doubt that the bold contrasts of light and shade, so characteristic of Renaissance

sculpture, resulted in a large degree from its decorative use. It had to fight for recognition among strongly accentuated constructional, or at least architectural, forms, to fit itself for association with the well-marked lines and bold emphasis of masonry.

Vernon Lee's favourite theory is that Renaissance sculpture is the child of Renaissance painting, and that the lights and shades are the sculptor's reply to the rich colour-schemes of his brother artists. Much of the work is at least highly pictorial in character—all the work of certain schools—but there were tides of action and reaction, witness Michelangelo's work in the Sistine Chapel, which is strong evidence that, in him, the painter was the pupil of the sculptor.

One initial difference there was between Greek and Tuscan on which the writer lays due stress, viz. that, while the Greek was before all things a modeller, the Tuscan was essentially a carver of stone; but it is too much to say, as Vernon Lee proceeds to do, that the Greek learnt nothing of the way in which “light and shadow corrode, ‘blur, and pattern a surface,’” because he worked in “dull, malleable clay” for reproduction in “ductile, shining bronze.” The Greek took the human form, in its highest perfection, but as he saw it; and we must remember that he practically lived with the nude, and with the nude seen in all its brilliancy under an Eastern sun. Perhaps he might have realised more than he did how all-inadequately marble represents the naked figure as a reflector of light, and have rectified the balance by a somewhat more forcible accentuation of the shadows; but his aim was to reproduce the highest type of the human figure with “the ‘skin slipping sweetly over the muscles.’” The pedantic display of anatomy was as odious to him as dissection itself, and we have no right to assume that he was fettered and weighed down by his medium. But if this is so, it is indisputable that the personal manipulation of the block of marble from the very start—a waste of time which was not unusual—was directly responsible for the bold and masterful handling of the Renaissance sculptors. Models, except of very small size, were almost unknown to them; when Agostino di Duccio cut so rashly into his block that he could make no further use of it, Michelangelo took it up, and it left his hand the well-known “David.” This is cited by Vasari as a *tour de force*, but he clearly regards the mishap which was its proximate cause as being no very uncommon experience.

It would be captious to quarrel with Vernon Lee's raw material, while her industry and intelligence are alike admirable. Some of her reflections, indeed, err on the side of obviousness, and might have been spared, as well as a certain pedantry, almost a preciousness, of manner which it is hard to condone. For her theories, we have seen that

they have a quality of their own, but the introduction of her smaller novelties is a poor testimony to her sense of proportion. "Pray don't be startled," she says in effect. Well, frankly, we are not. The firework has gone off, but there was more than a suspicion of damp powder about it.

At times the reader's poor hack toils vainly after Pegasus. "The country about Volterra," so we read, "revealing itself with rosy lividness at dawn, "with delicate periwinkle blue at sunset, through "an open city gate, or a gap between the tall black "houses, helped to make Neroni a lover of muscle "and sinew, of the strength and suppleness of "movement, of the osseous structure divined "within the limbs." If the connection was clear to Neroni, we have no more to say, but it is not to us.

ARTHUR EDMUND STREET.

(104)

### PALMYRA AND ITS TOMB TOWERS.

*An Account of Palmyra and Zenobia, with Travels and Adventures in Bashan and the Desert. By Dr. William Wright, Author of "The Empire of the Hittites," &c. With Eighty Illustrations and Thirty-two Full-page Engravings. 8o. Lond. 1895. Price 7s. 6d. [Messrs. Thomas Nelson & Sons, 35 & 36, Paternoster Row, E.C.]*

Dr. Wright, the author of this work on Palmyra and Zenobia, is "Editorial Superintendent" to the British and Foreign Bible Society, a post that implies some knowledge of Oriental languages; and he is on the Executive Committee of the Palestine Exploration Fund, which indicates that the Holy Land is not quite unknown to him. He was stationed for ten years at Damascus for missionary purposes, and for the establishment of schools in various parts of the country; thus he was brought in contact with Arabs, Bedawin, Druzes, and the various races in that part of the world. He of course acquired a knowledge of the language, and apparently seems to have had the knack of picking up all its familiar idioms, sayings, and proverbs; the book just published shows how valuable to a traveller such knowledge may be. He had a breech-loader as well as a revolver for defence against the ruthless robbers of the desert, and often was on the point of using them; but by tact, and a clever use of a proverb, or an appropriate saying, he disarmed attacks and secured his object, without running the risk of taking life. The account of his adventures in this book will make it attractive to the general reader, and no one will read them without admiring the man. His example might be recommended to some of our modern travellers.

The book is full of knowledge, historical and biblical, the result of Dr. Wright's long residence in the region, but he does not treat architecture quite as an architect might have done; still, the work is so full of references to architectural remains that it is deserving of at least some notice in this JOURNAL. It has long been known that

on the eastern side of the Jordan Valley the quantity of remains is far greater than on the western side; and the recognised explanation of this is, not that more structures existed in former times, but that there has been far more rebuilding on the west than on the east. Crusaders and Saracens conquered and overran the country, destroyed and rebuilt towns, walls, temples, and churches. On the east of the Jordan, although the same process took place, it was limited, and the result is that the old buildings, although in ruins, still exist in great numbers. Palmyra is itself a good example; there is no town there to use the city as a quarry; much has tumbled down, but there are long rows of columns still standing, and the ground is covered with those that have fallen. Palmyra seems to have been a city of columns: the principal street is a grand colonnade, and is supposed, when it was complete, to have had about fifteen hundred columns. There were also other colonnades that branched off on each side. At the Temple of the Sun there were 374 columns, each 70 feet in height. The whole of the enclosure of this temple is filled with clay-daubed huts, and forms a village; the Holy of Holies is a cesspool, which can only be explored at the present time with a scent-bottle or a handkerchief at one's nose.

Two very good reproductions of photographs, of which one is here shown [p. 290],\* are given of the Tomb Towers at Palmyra; every detail of the masonry is shown, and they are evidently fine specimens of building; the length of time they have stood is in itself good proof of this, the date of one being given as 9 A.D. Dr. Wright gives the measurements of one, which he calls the Kaser eth-Thuniyeh, as 33 ft. 6 in. square at the basement, and 111 feet in height: it has six storeys, reached by stone stairs; it has also an underground vault. This tower has places for 480 bodies. The existence of underground vaults for the dead is a bit of knowledge we owe to an awkward accident that befell Dr. Wright, when he ran a close chance of never being heard of again. Having fallen through a hole into the vault, he was able by means of a piece of magnesium wire and a cigarette-paper to make a plan, which appears in the book. There were nine loculi on each of the longest sides, and five at one end. This is of some importance, as it shows that there were at least two modes of sepulchre at Palmyra—not an exceptional circumstance, but one that is at times overlooked in architectural speculations.

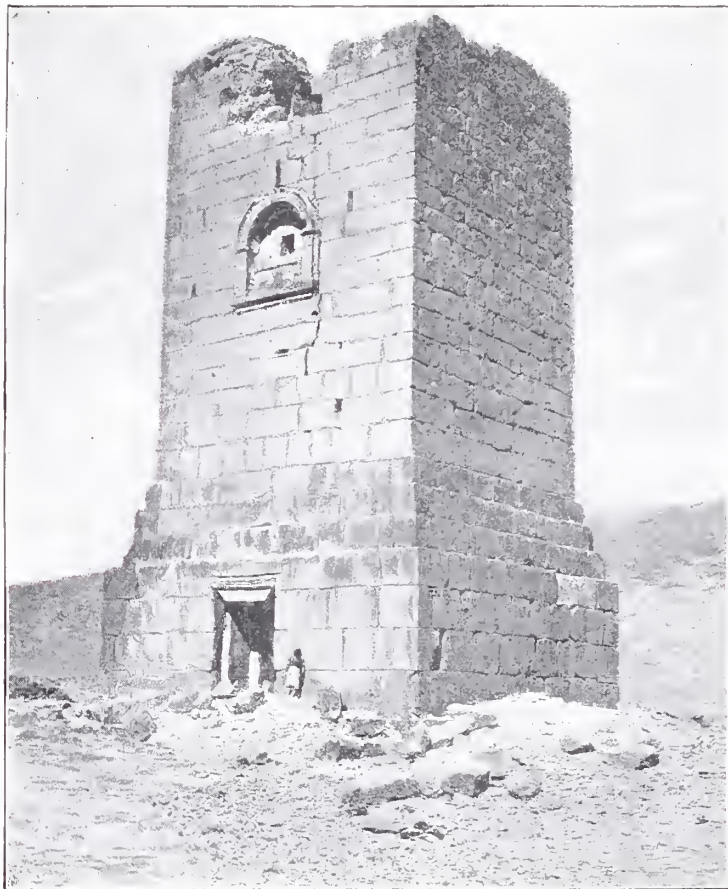
These Tomb Towers are all but new as a subject of consideration to architectural students, and yet they are not limited to Palmyra. Dr. Wright mentions similar towers still to be seen in Bashan; there is an old Persian one at Naksh-i-Rustam, which up to a late date had been looked upon as

\* The block is kindly lent by the publishers for the purpose of this review.



an ancient Zoroastrian Fire-Temple; Fergusson dealt with it under that reputed character.\* At Pasargadæ there is another of these monuments, known as Zindan-i-Suleiman, or the Prison of Solomon.† The restorations that have been made by Professor Cockerell and others might lead one to assume that the Mausoleum of Mausoleus at Halicarnassus belonged to the same type of monument. The Lycian tombs may perhaps be also derived from an early form of the same. These square tombs form a marked contrast to the round tombs which are also found in more than one

tombs, similar to the tomb of Diocletian at Spalatro, which has a very close resemblance to the Holy Sepulchre. There is also the "Tomb of the Christian" in Algeria, a round building derived from the Roman tombs, of which the Castle of Sant' Angelo—the Tomb of Hadrian at Rome—may be taken as a typical example. There are in museums old urns in the form of a primitive Roman round hut, which might have been the starting point of the circular Roman tomb; but the greater probability of origin is likely, in this case, to be found in the old Etruscan tumuli



TOMB TOWER, PALMYRA.

locality. The Holy Sepulchre at Jerusalem is a round structure; as it was built by Constantine, its form may have been derived from the Roman

\* See *The Palaces of Nineveh and Persepolis Restored*, by James Fergusson, p. 206. See also *History of Art in Persia*, by MM. Perrot and Chipiez, p. 74, fig. 21; also p. 221, fig. 104.—W. S.

† An illustration of this is given in *History of Art in Persia*, by MM. Perrot and Chipiez, p. 208, fig. 98. M. Perrot treats this, as well as the one at Naksh-i-Rustam, as a Tomb-Tower. The Hon. George N. Curzon, in his *Persia*, vol. ii. p. 144, gives an illustration of the one at Naksh-i-Rustam, where a tomb character is given to it.—W. S.

tombs, such as the Regolini Galassi tomb, which is a development from the primitive funereal mound. This would be in keeping with the origin of the Buddhist stûpa, a round monument, which is recognised as coming from the grave tumulus, or cairn. As far back as the time of the *Brahmanas* a distinction of some importance was attached to round and square tombs in India. This is shown by the following curious passage from the *Satapatha Brahmana*: "Four-cornered. The gods and Asuras, both the offspring of Prajapati, contended in the regions. The gods expelled the Asuras, their rivals and enemies, from the regions" [conceived, apparently, as square or angular]. "They, being regionless, were overcome. Hence the people who are divine construct their graves four-cornered; whilst the Eastern people, who are akin to the Asuras, construct them round." \* The Eastern people, we may assume, were the aborigines that the invading Aryans found in India, and their round graves were what is now represented by the stûpa: this agrees with other knowledge we have of that far-back period. The "divine people" were of course the Aryans, and their tombs were four-cornered or square. Crema-

tion, it may be stated, is comparatively a modern custom with the Aryans in India. That some signification was at all times attached to the form and construction of tombs can scarcely be doubted; but with only scant references to guide us, it is very difficult, in most cases, to discover what that significance may have been.†

\* *Satapatha Brahmana*, xiii. 8, 1, 5. Muir's *Sanscrit Texts*, vol. ii. p. 485.—W. S.

† This question of round and square tombs may possibly be connected with the meaning of round and square towns. Ecbatana was circular; and I may refer to my Paper on

On the journey to Palmyra Dr. Wright gives slight descriptions of the places on the way, and we learn of the remains of old temples and churches, of which little more than the foundations remain. These were in the early centuries of our era thriving places, with large and splendid buildings. Jambrouda, now known as Yabroud, sent a bishop to the Council of Nice. The inhabitants are now robbed by the Turk who governs them, and who does not protect them from the robbers of the desert—a condition of things which receives illustration in various forms in Dr. Wright's book.

Bashan, it would seem, is a vast mine of archaeological remains; Burckhardt, in 1812, reported the existence of the ruins of 171 towns; since then Waddington and others have added to the number, and Dr. Wright reports over 200 names of places in his note-book where, he says, "a rich harvest still awaits the patient archaeologist in that wonderful land." The author expresses the opinion that the period of prosperity in Bashan was from the time of Agrippa to that of Justinian; it was during the palmy days of Roman rule that there was wealth enough to have produced the splendid temples and palatial residences, the remains of which are yet visible in the ruins of Kanawât and Bosra. This period would also include the time when Palmyra was prosperous and great.

In conclusion, it may be stated that this book is a fine specimen of typography, and well illustrated. A good general idea may be formed from it of the architectural remains at Palmyra as well as of Bashan; the head and tail-pieces of chapters are nearly all from fragments of the architectural details, and they have the merit of being very carefully rendered.

WILLIAM SIMPSON.

(105)

## BUILDING LAW.

*The Law relating to Building; with Precedents of Building Leases and Contracts, and other Forms connected with Building, and the Statute Law relating to Building; with Notes and Cases under the various sections. Third Edition. By His Honour Judge Emden, assisted by Henry Johnston, Esq., Barrister-at-Law. 8o. Lond. 1895. Price 14s. 6d. net; postage 6d. extra. [Messrs. Knight & Co., 90, Fleet Street, E.C.]*

This is a new edition, somewhat abbreviated for the reader's convenience, of a standard work long known to the building world. The subject is treated under numerous divisions, intelligently

separated, and set out in good order, dealing successively with leases and agreements; quantities, specifications, tenders, and contracts; the architect's duties and liabilities, his certificates, and the builder's position and payment; with such further questions as extras, specific performance, damage, rentcharges, building covenants, assignments; also with roads and drains, light and air, party structures, support, gas and water, and taxes and assessments; followed by an elaborated series of forms for the various kinds of contracts, leases, grants, mortgages, notices, arbitrations, and all else; concluding with the full text of the London Building Act annotated, and the selected sections of the Local Management Acts, Public Health Acts, and others affecting Metropolitan building, down to the London County Council Bye-laws. Last, not least, there is that invaluable addendum, a copious index. In spite of the scorn which is so frequently flung at the person who relies upon literature of the nature of "Every Man his own Lawyer," it cannot be questioned that a quasi-popular treatise of this comprehensive character must be of the utmost benefit to men of business. I may add that, for the satisfaction of those who are more men of law, there are between three and four thousand references to "cases"—a circumstance quite enough of itself to strike the lay reader with inextinguishable respect.

Those who hold the opinion, forced upon so many by sad experience, that, as a rule with few if any exceptions, litigation in building affairs is an entirely clumsy and helplessly haphazard process—owing to the elementary fact that the artificial abstractions of law courts and the plain facts of building and common sense of building men are in irreconcilable antagonism—those indeed who maintain that the simplest and most nearly amicable form of arbitration in the hands of intelligent and honest practical men is the *only* rational means of adjusting or compromising building controversies and disputes, must nevertheless be encouraged to understand that there are natural principles of justice which always underlie the investigation of technical incidents and the discussion of expert opinions. The universal authority of those principles cannot, of course, be gainsaid, and the ordinary builder, surveyor, or architect who has a book of this kind to refer to in cases of difficulty need never fear to consult it on the ground of his own incapacity. No doubt all "law-books" are necessarily obscure and prosy to the lay reader, but when the professional author is actuated by the simple human motive of making himself intelligible to plain men, he can, in a superficial way at least, easily succeed; and accordingly, when the lawyer favours us with a popular treatise on building law, we may thankfully acknowledge our obligation to his good nature. It may be cordially said, therefore, that, to all appearance, Judge Emden and Mr. Johnston

"Mud Architecture" [TRANSACTIONS, Vol. III. N.S.], where a drawing and description of Lasgird is given; this is a circular village. Babylon, on the other hand, was square in plan; other towns in Mesopotamia were the same. This form can be traced as far east as China. Peking is square; so are many Chinese towns. The same form is found in Burmah. The new Jerusalem was square. There must have been some symbolism in this; and the subject has yet to be worked out.—W. S.



quite deserve that their work should be credited with the successful achievement of a praiseworthy enterprise.

It is obviously impossible on the present occasion to pretend to submit to the Institute anything like a critical examination of so voluminous and intricate a work; but, as an illustration of its comprehensiveness and practical character, the chapter which treats of "The architect, his duties and liabilities," may be referred to. In the first place "his appointment" is shown to be, in matters of detail, by no means so simple as some appear to think. It is so far gratifying to be informed that "no particular form of appointment is necessary"; but it may not be generally understood that, if the business cannot be "completely performed within the year," the appointment must be by agreement in writing. Then, if the engagement is by a "corporation," this agreement must be under seal, or the too-trusting architect "cannot recover." Perhaps also the corporation "cannot" pay. Again, if the architect who is to act should be not duly nominated beforehand, or at least be not "appointed within a reasonable time," the contracting builder may throw up his contract. All this and much more of the same sort is worth knowing thoroughly.

Turning next to the important subject of "Remuneration," we are told with sufficient cheerfulness that "the mere employment of a professional person implies an undertaking to give him a reasonable remuneration"; but, when we rejoice over this intelligence, we are at once pulled up by a little further information, namely, that "this inference may be rebutted by circumstances." Such a reminder really means that a rich client may in most cases not only compel a poor architect to complete his service to the bitter end without receiving a penny, but that he may then refuse to pay even that penny on the ground of no one knows what "circumstances." Indeed the architect is quite open to be sued for "negligence" besides; while all the time he may find what consolation he can in the late Lord Coleridge's pleasant remark (not, of course, quoted in this book) that the recent reforms of legal procedure serve, after all, only to give additional advantage to the litigant with the longest purse. However, if we suppose our poor architect in the end to gain the day, but to go bankrupt in spite of his victory, then there is at least one other consolation, namely, that when the money is really recovered, although it must of course pass to his trustee, he will be allowed out of it "a sufficient sum to support life" for a period not stated. Be all this as it may, we are further informed that "there is no fixed rule regulating the payment of architects," but that there is a "Schedule of Rules" published by the Institute which "cannot be binding on the parties"—meaning on either party, by the way—unless by special agree-

ment. Our authors, therefore, plainly advise that the architect—being apparently of necessity the weaker party—should invariably protect himself by having a written agreement beforehand: a matter of delicacy, however, which it is not easy in practice to deal with. Another instance of the difficulties that so frequently arise with reference to remuneration is the case of preliminary or unused drawings. It has been decided that "provisionary plans and drawings" are "drawings to be approved of by all the requisite parties," and that if he fail to obtain such approval, the architect "has no cause of action." Now, whatever lawyers may say, architects know that to apply this maxim to their particular work as anything like a rule would be simply iniquitous. Neither is this the only point upon which the courts are apt to confound the position of the trained and recognised professional designer with that of the pushing shopkeeper who "will supply sketches with the greatest pleasure and without any charge." For instance, the simple and convenient custom of paying an architect by commission is with many of the learned fraternity an almost insurmountable difficulty. Their argument runs thus:—If the architect charges by "commission," he is a "commission agent"; and a commission agent is one who, undertaking to achieve for his principal a certain commercial end, is remunerated, not for work, but for success, taking as it were a speculative profit by way of a share in the accomplished benefit; so that, if the benefit be not consummated, there is nothing to pay. Accordingly, there have been judges of eminence who, but for other considerations, would academically refuse to allow an architect any remuneration at all for preparing complete working plans which have not been carried out; and the idea of such preparatory *paper* work being charged for at the rate of half the commission on the *building* work they would be inclined to regard as too absurd for discussion, preferring to allow, if they must allow something, some lump sum as a sort of compromise, or even only as an act of grace. The best way, of course, to avoid misunderstanding is to take an early occasion to send to the client the Schedule of the Institute; although, equally of course, such a step may in certain cases provoke an undesirable discussion at the beginning which is not likely to arise at the end.

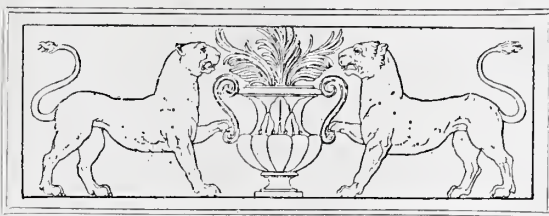
It goes without saying that many of the disputes which may arise between an architect and his client must "go to a jury"; and then, as everybody knows, although the risk of getting a decision too scientific for common sense is diminished in the direction of law, the danger is increased in the direction of that kind of unintelligent compromise which is called jumping to a conclusion. Amongst other cases this consideration comes into view when plans are eventually rejected because of the tenders exceeding the

preliminary estimate. Here, again, the architect is very liable to fall into a pit. A client, for example, is dissatisfied with his tenders—a result which is very common indeed. All he has to do in order to be able to abandon the project and dismiss the architect without any remuneration is to satisfy a jury of his having stipulated that the cost should not exceed a sum stated; and how easily this can be done by any person who is sufficiently artful at the beginning, and sufficiently unscrupulous at the end, need not be described. The remedy lies in nothing else but the exercise of extreme caution by the architect in his correspondence. To suppose, as many lawyers are apt to do, that the architect enters into an implied contract with the client as regards the cost—to obtain for him, in fact, an indefinite building for a certain fixed price—is in practice, as every practical man knows, entirely absurd. When an architect, by fraudulent representations, or through scandalous want of skill, misleads his client as regards outlay, let him suffer; but what generally lies at the root of the disappointment in question falls far short of anything of that kind. But this is the dictum of common law: “Where a person undertakes, and is employed in performing, a work of skill and labour, and fails therein, so that his employer derives no benefit from the work, he is not entitled to recover payment,” because “he ought not to undertake the work” (even by implication) “if he does not know whether he can succeed or not.” So be it.

That an architect is not at liberty, on grounds of honour, to take secret allowances from his builder is well understood; but the exact law on the subject ought to be better known than it often is, namely, that any such allowance, when accepted by any fiduciary (that is, confidential) agent, is received on behalf of his principal, and must be so accounted for; and, moreover, that “any surreptitious dealing” of that nature is simply “a fraud,” involving most unpleasant possibilities to both giver and receiver. A less likely eventuality, but equally fatal, is that of a private understanding on the part of the architect with the employer to the effect, in any practical way, that the builder’s bill shall be kept within a certain limit. This principle, however, supports the apparently paradoxical idea that an architect, as arbitrator, although employed and paid by one party and not by the other, may be relied upon to be strictly impartial between the two: a recognition which very few other orders of business men can claim, and which our profession, standing upright on its own ground, may feel proud of being acknowledged to deserve.

The above remarks, applying to only half a dozen pages of the voluminous work before us, may perhaps serve to show what a vast amount of valuable information is massed together in the whole treatise.

ROBERT KERR.



## THE ADMINISTRATION OF ART IN FRANCE. III.\*

By ANTONIN BARTHÉLEMY, Delegate of the  
Ministère des Beaux-Arts, Paris.

The State is in every country the great public builder. But, coming to this portion of my task, I must at once indicate that the active services of construction are in France outside the pale of the Administration of the Fine Arts, and more particularly depend on the Direction of Public Worship, the Ministry of Public Instruction, the Prefect of the Seine, and the Prefect of Police. I may at some future time speak of the duties appertaining to those various authorities; I do not wish now to trespass much longer upon the patience of readers, and my business is principally with what is called the Administration of the Fine Arts. Those who wish for the most complete information on those matters will find it in a work I have already mentioned, to be found in the Library of the Royal Institute of British Architects.

The Ministry of Arts, which was created by Gambetta in 1881, and lasted only from the 14th November of that year to the 26th January 1882, had in view a centralisation of all the services of architecture, from the construction of a village school to the restoration of a cathedral. The responsibilities are, at the present time, much too scattered; and the young architects who are called to the Committee on Historical Monuments or the service of the *Bâtiments Civils* do not find sufficient employment of their energies.

Until quite recently there was a Direction of the *Bâtiments Civils*, which, after having been under the control of the Minister of Public Instruction and Fine Arts, had been added to the department of the Minister of Public Works. It has finally been abolished, and the Director of Fine Arts has now the sole control of that department; it is evidently a return to what had been attempted in 1881, and we must be grateful for it.

One could write a most entertaining little book upon the doings of that ill-fated Direction of the *Bâtiments Civils*. First of all, what does one suppose a civil building to be? Most decidedly a building neither religious nor military. And yet, before the Panthéon was restored to the civil worship of great men, when it was the church of

\* Previous articles on this subject appeared at pp. 186 and 225.



Sainte-Geneviève, it was included in the list of civil buildings. The little chapel erected on the Boulevard Haussmann as a memorial to Louis XVI. is a civil building. The church of the Invalides is a civil building; and it is strange to note that, while the Invalides belong to the Ministry of War, the church which they enclose belongs to the Direction of Civil Buildings. The Asylum at Charenton is a civil building, but not those at Vincennes and Le Vésinet. The Ministry of Agriculture has given up to that Direction its veterinary schools and stud farms. The Ministry of Public Instruction has also given up the national manufactures and a few schools. It has abandoned the College of France, but has retained the School of Medicine!

Living under the same roof, the Direction of the *Bâtiments Civils* and the Direction of Fine Arts most seriously exchanged letters, whenever a question cropped up such as the insertion of a pane of glass in a window of the Louvre, or the repairing of a bench in a gallery. When, after the fire which destroyed the Opera of the Rue Le Pelletier, the *Assemblée Nationale* voted a sum of 2,400,000 francs for the repairs of the scenery, the Direction of the *Bâtiments Civils* claimed a part of that sum, saying that if the scenery unquestionably belonged to the Department of Fine Arts, it at least owned the frames, which were to be considered as fixtures.

I remember that when we organised the French sections of Fine Arts at the Universal Exposition of 1889 we asked the Direction of Fine Arts to be allowed to take a cast of the magnificent lion by Barye, which is in the Tuileries Garden. That application was, of course, a mere formality, and was speedily granted. But when the workmen came to do their work, the Direction of the *Bâtiments Civils* interposed, saying that there was no doubt about the lion being the property of the Direction of Fine Arts, but that certainly it did not own the pedestal upon which the workmen had to rest their ladders. And there is another story, which, if you please, shall be the last. When, in 1887, the Congress was called to Versailles to elect a President of the Republic, vans were sent from the *garde-meuble* with the necessary furniture for a room which is never used but for that purpose. The curator of the Versailles Museum, who had pictures to send to Paris, thought that it would be safer and less expensive to send them by those vans which were going back empty. He wrote to the Direction of Fine Arts, which communicated with the Direction of the *Bâtiments Civils*—and M. Carnot had for some time already ruled over France when the answer was received!

It had come to this, that it was not the same service which cleaned the inside and the outside of the windows in most of the public buildings, and with all the staff of architects, clever, as a rule, and willing, with all its *agences de travaux*, it

did not fulfil the task which the State expected it to perform. Versailles was left in a lamentable state of neglect, and the plant of red-tape had everywhere grown wild.

As early as 1848 Mérimée, who was not only a great writer, but also a most able and zealous defender of our historical buildings, asked that all such buildings should be given to the Committee on Historical Monuments, the Direction of the *Bâtiments Civils* keeping the others; and in 1855 a first step was taken by giving to the above Committee the Sainte-Chapelle and the Saint-Denis basilica. Then matters were allowed to remain for a long time in the state which I have described, and it was only last year, after Parliament had expressed its firm intention to do away with what was a kind of standing joke, that the Direction of the *Bâtiments Civils* was, as I said, abolished, and a decisive step taken towards the constitution in France of a real Administration of Art.

We may rely upon the present Director of Fine Arts to set things right, but his task is not an easy one. I hope my readers will forgive me for saying that those who have to deal with architects are not always to be envied. Restorations are often complained of which would be less questionable if the architects intrusted with them consented to consult with archæologists. And in too many cases do we see buildings erected without reference to the wishes of those who are destined to inhabit them. I might give instances of monuments which are perfectly inappropriate to the object in view; and I have a friend who holds this opinion, that if the Council of the *Bâtiments Civils* had been called upon to give their advice on the construction of railway stations, France would now be covered with Greek temples and Roman porticoes.

The State is not only a great builder; it is also a great artist. I mean that its duty is to provide for the adequate decoration of the buildings which it controls; and here I can only repeat what I said in my first article, that no good can come of making a building a field of competition between artists of different schools and styles. I do not admire the decoration of the Panthéon of Paris, and I can only hope that the Royal Exchange in London will present a happier combination of subjects and colours. I hold that the incoherence which we have so often to deplore between the building and its decoration is due to the fact that the architect and the artists intrusted with the decoration of his work are kept apart. It is not good for the artists, nor is it good for the architect; and it has in a large measure made it possible that such a question as this should to-day so often be asked, Is architecture an art or a profession?

The Ministry of Arts of 1881 was so thoroughly imbued with those ideas that it established a Direction of Construction and Decoration, to which

was given control of the purchases made every year by the State in the various expositions, and of the orders which the State gives annually to certain artists. Speaking of the expositions, I should not omit to mention the travelling scholarships which the State grants every year to young artists who have given in the two Salons indications of such talents as would benefit by a sojourn in foreign countries.

That same direction had charge of the decoration of the streets and public gardens and of the organisation of public ceremonies. I know all that can be said against centralisation, and I deeply regret that the State in France should not rely more upon private initiative, instead of persisting to hold it in a condition of tutelage. England is the home of private initiative, and it is undoubtedly private initiative which has made the British Empire what it is. But it must be acknowledged that if Paris were divided into a number of vestries or other local organisations, with a Corporation in the Ile Saint-Louis and a County Council on the Boulevards, it would not be the very beautiful city that every one owns it to be. And it is the more to be regretted that there should not be in London some central organisation: for London is full of possibilities. Lord Beaconsfield deplored the absence of such centralisation. "London," said he, "possesses only one "of the qualifications of a grand city, size; but it "wants the equally important one, beauty. . . . "This amount of building capital ought to have "produced a great city. What an opportunity for "architecture! Marylebone alone ought to have "produced a revolution in our domestic architecture. It did nothing. It was built by Act of "Parliament. Parliament prescribed even a "façade. It is Parliament to whom we are indebted for your Gloucester Places, and Baker "Streets, and Harley Streets, and Wimpole Streets, "and all those flat, dull, spiritless streets, resembling each other like a large family of plain "children, with Portland Place and Portman "Square for their respectable parents. The influence of our Parliamentary Government upon the "fine arts is a subject worth pursuing." And Lord Beaconsfield, looking for a remedy to that evil, declared that what was wanted in architecture, as in so many things, was a man: "Shall "we find a refuge in a Committee of Taste? "Escape from the mediocrity of one to the "mediocrity of many?" Pointing out that the pure administration of justice dated from the deposition of Macclesfield, that the navy never achieved a great victory until an admiral had been shot, Beaconsfield proposed to hang an architect. Heaven forbid that such a fate should befall a member of the Royal Institute! But the State does not evidently fulfil its duty when it fails to encourage public architecture, because the State is the natural trustee of what must be regarded as

the common inheritance of the nation, and because it can do what individuals cannot be expected to perform—I mean, promote those great works which require long premeditation and great sacrifices of time and money.

I will say no more. I have come to the end of my task, which, I fear, has been imperfectly fulfilled. But I should be glad if what I have said could awake in the minds of a few at least of my readers a taste for those studies of administration of art to which I have devoted the best years of my life. Above all should I be thankful if I have made it plain that art is the common ground on which we can all meet; and that a great benefit might be derived from a stronger organisation between all those who love art, and who mean to give it, in their social and personal life, the great place which is its due.

## THE GLORY OF LOMBARDY.

By PAUL WATERHOUSE [F.], M.A. Oxon.

All through the night of the 26th August, five hundred years ago, the hammers of workmen and their busy Italian voices silenced the nightingales in a green corner of the Lombard plain; for on the morrow would come the great Duke Giovanni Galeazzo, with two of his sons and Francesco Barbavara, to lay, as the first foundations of a new monastery, the four inscribed stones blessed by the Bishop of Pavia, and there was still many an hour's work to do to finish the great pavilion—the *salla pro primo lapide*—in which the court of the Duke and the gathered Certosini would witness the celebration of a solemn Mass. Such was the pious inception of that great Certosa, marvellous in a land of marvels, which now, reft of its religious purpose but not of its religious significance, stands an enduring and entrancing monument of the homage which an age of restless infidelity could pay to faith and rest. So great was the solemnity of the initial ceremony, and so vividly did it live in popular tradition, as to furnish, after a hundred years, the subject of two bassorilievi in the building.

The stone-laying and the Mass were followed by a banquet, from which the Duke was absent; and this in turn was followed by a conference of Milanese architects, who set out the plan of the future building. Many a church bears in its features the evidence of variant hands and brains—in fact, there are few large buildings of the Middle Ages in which a single and original purpose has been carried out on the unaltered lines of the first proposer—but it is improbable that many fabrics, except in modern times, have supplied the field for a battle of styles such as was fought over the Certosa of Pavia. It is to this conflict of methods, not less than to the super-excellence of its display in the three arts of archi-



itecture, painting, and sculpture, that the building owes its unchallenged power of interest.

Political upheavals caused the first operations to be followed by half a century of stagnation, and the works were not resumed till 1450—that memorable date which Alberti has incised on these pointed arches, decked in Latin trappings, which are the wonder of the Malatestan Church at Rimini. But the struggle at Pavia was not yet to be between Gothic and Classic. This lapse of over fifty years, in itself enough to produce a change of style even under the normal stride of art's progress, happened to coincide with an unusual crisis in architectural history. At the time when the foundations were laid, the laws of construction among the Lombard architects were exposed to influences from over the Alps. There was a rush of Northern theory from France and Germany, which, if it did not serve to revolutionise the principles of Lombard construction, was at least warmly welcomed by the Milanese architects. Looking at these novelties rather from a decorative than a static point of view, they experimented with them in Milan Cathedral—that pile of miscreated blunders whose popularity with English multitudes is the crowning evidence of its failure. To do it justice, the building has its partial virtues, but they are not among the qualities for which it is so multitudinously admired.

The Certosa, then, thanks to the congress of Milanese experts, was to have been a Milan Cathedral in microcosm, but, thanks to circumstances (for which thanks to Heaven!), their projects were never carried out. Guineforte Solari—not the first of his family to work on the building—was in charge of the operations on their resumption, and struck a blow for Lombard tradition. As far as his foundations permitted he returned to the vernacular method, and he carried out his changes, not merely in matters of detail but constructionally, by substituting for the intended flying-buttresses (which do not grow well in Italian soil) the traditional running arcade, which in this case is not, as often, a mere ornament to the external walls of the nave, but a device whereby to supply a counterpoise to the vault thrusts. The weight of the arcade itself, and any thrust that may be transmitted through it, is transferred by arches concealed under the aisle roofs to the main piers and to the walls between the chapels.

These changes—reversions rather than progressions—only carry us less than half-way towards the culminating glories of the church. Restrained by some more than mortal force—or perhaps with a knowledge of the gathering powers that in other towns had begun to bear their fruit—Guineforte and his band kept their hands off the façade. Solari had his own intentions as to the front, and what they were may be seen in the model which Borgognone placed in the founder's hands. It is no easy matter to determine the reasons which

induced the painter to represent on the model a façade which was neither that of the original nor of the executed design, for Borgognone had more than a bystander's share in the project finally adopted. Perhaps he mistook Solari's for the original; perhaps there was no original obtainable, and this was a convenient substitute. At the bidding of destiny and at the age of fifty-two Guineforte Solari died, and in his dying removed the only obstacle to realising in the façade the views of the younger school. He had been a great architect of many works, and he lived and moved in the mysterious twilight between the Lombard architecture and the Renaissance.

His son, Pietro Antonio, made himself a name and left it carved on the Kremlin at Moscow; his daughter became the wife of Amadeo—the great sculptor Giovanni Antonio Amadeo—whom we know at Bergamo in the Colleone Chapel, at San Lanfranco near Pavia, in the Borromean Chapel on Lago Maggiore, but pre-eminently at the Certosa. He, with Cristoforo Mantegazza, Benedetto Brioso, and the excellent Lombardo, was the creator of that gorgeous frontispiece which, for all its sins of omission, commission, and fallacy, is one of the great masterpieces of the world. The artists quitted the shape of the building, in itself a graceful one, to adopt for their own purposes one which in itself is unpardonable. The outline is execrable, but the result is consummate. It is like some great cliff, amorphous though symmetrical, against which the accumulated wave of the Renaissance has dashed and left its impress.

We have in our Library, through the kindness of the author, a monograph of an unusual character.\* Signor Beltrami [*Hon. Corr. M.*], whose connection with the Institute we proudly acknowledge, is not an architect only, but a writer of great judgment and feeling. The impression of sympathetic alliance between his writing and his subject is not, I am convinced, merely due to those associations which cling like an aroma to the Italian language. It is not alone the charm of the Transalpine tongue which transports the reader to the hot expectancy of that very dusty "strada carrozzabile" between the station and the monastery, thence to the cool shade of the "vestibolo d'accesso," and thence again to the unnamable, innumerable wonders of the buildings within, to the treasures of the chapels, the beauties of the gardens, the solitudes of the cloisters.

Signor Beltrami's book is technical, historical, and scientific; still, for its quality of sympathy I should put it on the shelf, not among the row of red covers which are our common travelling companions, nor with the architectural text-books, but between Symonds's *Sketches* and Bourget's *Sensations d'Italie*.

\* *La Certosa di Pavia. Storia (1396-1895) e Descrizione.* By Luca Beltrami. So. Milan 1895.



## MINUTES. IX.

At a Special General Meeting, held Monday, 2nd March 1896, at 8 p.m., Mr. F. C. Penrose, F.R.S., *President*, in the Chair, with 13 Fellows (including 7 members of the Council) and 7 Associates, the President moved that, subject to Her Majesty's gracious sanction, the Royal Gold Medal for the promotion of architecture be presented to Mr. Ernest George, for his executed works as an architect. The motion having been seconded by Mr. Aston Webb, F.S.A., *Vice-President*, it was

RESOLVED that, subject to Her Majesty's gracious sanction, the Royal Gold Medal for the promotion of architecture be presented this year to Mr. Ernest George, *Vice-President*, for his executed works as an architect.

The meeting then terminated.

At the Ninth General Meeting (Business) of the Session, held Monday, 2nd March 1896, at the close of the Special General Meeting above referred to, Mr. F. C. Penrose, F.R.S., *President*, in the Chair, with 13 Fellows (including 7 members of the Council) and 7 Associates, the Minutes of the Meeting held 17th February 1896 [p. 269] were taken as read and signed as correct.

Referring to the Resolution of Condolence in respect of the late Lord Leighton passed at the General Meeting of the 3rd February, the President read the correspondence in relation thereto which had passed between the Institute and the Council of the Royal Academy [p. 282].

The President announced that the Council had that day drawn up and signed a petition to the House of Commons urging the rejection of the City and South London Railway Bill now before Parliament, which Bill, if passed into law, would involve the demolition of the church of St. Mary Woolnoth.

A list of donations to the Library [see *Supplement*] was taken as read, and an expression of the thanks of the Institute to the several donors was ordered to be entered on the Minutes.

The following candidates for membership were elected by show of hands, under By-law 9, namely:—

## As Fellow.

HENRY PHILIP BURKE DOWNING, F.S.I. (*Qualified as Associate* 1889).

## As Associates (32).

HALLAM CARTER PEGG (*Qualified* 1890).

OSBORN CLUSE HILLS (*Qualified* 1895).

ERNEST REUBEN ORTON DAVIS (*Probationer* 1890, *Student* 1892, *Qualified* 1895), Leicester.

CHARLES MATTHEW ELLISON HADFIELD (*Qualified* 1895), Sheffield.

JOHN ROBERT SMITH (*Qualified* 1895).

KENNETH WOOD (*Qualified* 1895), South Shields.

EDWARD ARTHUR WHIPHAM (*Qualified* 1895), Stockton-on-Tees.

HENRY WHEELER ANDERSON (*Qualified* 1895), Adelaide, South Australia.

ARTHUR DOWN (*Qualified* 1895), Warrington.

LAWTON ROBERT FORD (*Qualified* 1895).

GEORGE CHURCHUS LAWRENCE (*Probationer* 1890, *Student* 1892, *Qualified* 1895), Bristol.

WILLIAM EDWARD KING PALMER (*Qualified* 1895).

GEORGE RICHARDSON SMITH (*Qualified* 1895), South Shields.

WALTER HENRY STEADMAN (*Qualified* 1895), Bristol.

TOM TURNER (*Qualified* 1895).

EDWARD THOMAS ALLCOCK (*Probationer* 1889, *Student* 1891, *Qualified* 1895).

EDGAR GEORGE CUSSON DOWN (*Qualified* 1895), Cardiff.

CHARLES BURROWS FLOCKTON (*Qualified* 1895), Sheffield.

ARTHUR JAMES STRATTON (*Probationer* 1890, *Student* 1892, *Qualified* 1895), Liverpool.

TOM WILLIAMSON HOOLEY (*Probationer* 1892, *Student* 1893, *Qualified* 1895), Manchester.

WALTER BRAND (*Probationer* 1891, *Student* 1893, *Qualified* 1895), Ipswich.

HARRISON MORTON (*Qualified* 1895), Taunton.

JOHN DOUGLAS BLAND (*Probationer* 1891, *Student* 1893, *Qualified* 1895), Cambridge.

EDMUND FARLEY COBB (*Probationer* 1889, *Student* 1890, *Qualified* 1895), Rochester.

PERCY RIDER SMITH (*Probationer* 1890, *Student* 1891, *Qualified* 1895).

JOHN LEWIS REDFERN (*Qualified* 1895), Hanley.

ERNEST ROBERT DANFORD (*Qualified* 1895), Rotherham.

NICHOLAS FITZSIMONS (*Qualified* 1895), Belfast.

VICTOR DANIEL HORSBURGH (*Qualified* 1894).

CECIL SCOTT BURGESS (*Qualified* 1895), Edinburgh.

EVERARD EASTEE JORDAN (*Qualified* 1895).

GEORGE LEWIS SHEPPARD (*Probationer* 1893, *Student* 1894, *Qualified* 1895), Worcester.

The President announced his approaching departure for Athens as one of the International Commission of three architects appointed by the Greek Government to report upon the repairs required at the Parthenon in consequence of the earthquake of 1894 [p. 282].

The proceedings then terminated, and the Meeting separated at 8.35 p.m.

## PROCEEDINGS OF ALLIED SOCIETIES.

## THE BIRMINGHAM ASSOCIATION.

Some Observations on Ancient and Modern Building.  
By Arthur Dixon, M.A.

Read 7th February 1896.

The question I have proposed to myself to consider is, How is it that ancient towns and villages are delightful and full of beauty, and that modern towns are, on the whole, ugly and uninteresting? By ancient I mean, roughly speaking, previous to the present century, and more especially previous to the sixteenth century. And when I venture to speak of modern towns as ugly, I do not mean that many modern towns do not possess one or more modern buildings which within certain limits are beautiful and interesting, but that, on the whole, modern towns are failures from the point of view of architectural interest and beauty.

It will be convenient to clear the ground of one or two points which do not immediately concern my present point



of view. One often hears people say it is only a question of age: old buildings are beautiful because they are old, and modern buildings will be the same when their time comes. There is, I think, some truth in this, but not much. Age to some extent obliterates and softens defects, and in the country, at least, it adds beauty of its own, especially in the way of colour. Also age blunts criticism, on the principle of the adage, "De mortuis nil nisi bonum." When a wicked man is dead our anger at his misdeeds is blunted; and when a building is old enough to be considered dead, or rather to be considered of a dead style, we are able to regard its faults with a certain charity, born of its impotence to grow and reproduce itself. But if age can add beauty to what is already beautiful, and can soften ugliness, it cannot make an ugly thing beautiful. Then there are certain difficulties which stand in the way of modern building, but which are foreign to the building itself and its processes. Smoke, for instance—and, in manufacturing towns, other fumes, which terribly limit the colour scheme; copper will not turn green, and everything else turns black. By-laws, which impose some apparently unnecessary and very inconvenient restrictions. I have in my mind the by-law which provides that all woodwork shall be set back  $4\frac{1}{2}$  inches from the surface of walls—and this tempts me to a digression.

Why is it that a window set flush with the wall looks right, that a window set back a foot or two looks right, but that a window set back  $4\frac{1}{2}$  inches looks wrong? I refer, of course, only to wood-framed windows, and not to stone mullions. I think the explanation is probably something of this kind. Glass set flush with the wall, if not cut into too large pieces, catches the sunshine and makes a cheerful glimmer of light, while it does not detract from the solidity and repose of the wall. If, on the other hand, the glass is set back a foot or two, it misses the sunshine, and you get almost as rich a shadow as if there were no glass at all, and the repose and solidity of wall-surface which you lose in one way you regain in the depth of shadow and the thickness of wall revealed by the opening. A window set back  $4\frac{1}{2}$  inches seems to miss all the good points and catch all the bad ones. It breaks up the wall-surface ineffectively, and puts the glass in a position where it gives neither the gravity of deep shadow nor the cheerfulness of reflected light.

Then there are the by-laws which, because of the objections which no doubt exist to some kinds and degrees of projections beyond the street line, absolutely prohibit everything in the way of projecting windows, and prohibit the only kind of signboard which adds to instead of detracting from the character of a building. Then there are what I may call the commercial exigencies, the demand for large plate-glass windows, for unseemly advertisements, for obtrusiveness generally of style and decoration. These are questions really of public taste, and will, it is to be hoped, solve themselves in time; indeed, already in the more highly developed communities there are signs of a better appreciation of the necessities and decencies of building. All these points, however, are beside my subject, which seeks to deal with what I may call the esoteric causes only of the want of delight in modern buildings, and I propose to consider them under two headings, namely. *Craftsmanship and Materials*.

By the former I mean the manner in which an architect's design is carried out, quite apart from the design itself; and here I think we are met on the threshold of the inquiry with what seems at first an almost insuperable difficulty. I do not for a moment mean to suggest any disrespect for our modern stonemasons and carpenters: they are probably as highly educated, as intelligent, and as skilful in their own way as they have ever been; indeed, in some ways they are too clever and too skilful; but I think the system under which they work makes it impossible for them to give their work the character and delight which

mark ancient and especially mediæval craftsmanship. It is supposed that the mediæval craftsmen went about the country in gangs or companies under the lead of their foreman, who must have acted as architect, building churches and manor-houses and cottages. By working always together they formed a distinct style and tradition of their own, and in different parts of the country one can recognise a similarity of style in most of the buildings of mediæval date. Each man must have had a personal interest in his work which grew and developed with every building he worked at. It would be much the same as if nowadays builders were always their own architects, or architects their own builders; so that the same man designed and built the house, and was always working in close sympathy and relationship with the men who laid the stones and framed the timber.

The present state of things is, of course, very different. How can a workman feel a personal interest in his work, or put any personal feeling and character into it, when from month to month he works at different designs in the different styles of different architects? The highest development he can come to is to quickly grasp the ways of his ever-succeeding masters; there is no right or wrong for him—no good or bad; there is only this style or that style; and so his highest skill comes to be imitative, slavish, and lifeless. It is not only by the individual variations of the architectural mind that the craftsman's mind becomes confused and fettered, for architects are divided into many camps. One day the craftsman may find himself called upon to work in the manner of the fifteenth century, the next day he may find himself antedated by a thousand years, and the day after wake to find himself a Frenchman under the *Grand Monarque*. How can a man working under such conditions put life and character into his work; and how can his work be worth turning aside to look at if he does not?

When it is a question of plain brickwork there is not perhaps very much in it, though even here the value of a definite and growing tradition must have been very great. But when we come to masonry the question becomes one of vital importance, and it is impossible, or almost impossible, for the cleverest architect and the most skilful mason to put character into their work.

I lived for some months in a Gloucestershire farmhouse which had been built at three different periods. The barn was built, I believe, in the fifteenth century; the arrangement of the hewn stones and rubble-work is in itself a work of art, and gives the greatest delight to the plainest of buildings. The house itself was built partly in the seventeenth and partly in the eighteenth century. The earlier masonry is still interesting and characteristic, though inferior to the barn; the eighteenth-century work had lost all character and beauty. The same remarks would apply, I think, generally to buildings in this part of the country.

The deterioration in the character of masonry which went on from the fifteenth to the eighteenth century is due, if my point of view is correct, to the gradual change of the system under which building operations were carried on. In the early times it is practically true to say that architect, builder, and mason all united together as members of one gang or company, not for a few months over one building, but more or less permanently over a series of buildings. In other words, the foreman of the company, or master-builder, who was himself a mason or a carpenter, would prepare the plans and act as architect, very likely in consultation with the men, any of whom might in time hope to take the lead in the company. This would give scope and encouragement to the growth of individual intelligence and feeling, and the company, by always working together, would develop a vital and always growing style or tradition. As time went on division of labour began to creep in; architect, builder, and mason became separated into three classes, with the result that traditions of craftsman-

ship were broken up. The builder became a man of business, and the mason a machine.

This does not mean, as is sometimes suggested, that mediæval buildings were built without an architect. The leader of the band of craftsmen, the foreman or master-builder, was no doubt, so far as the making of the designs is concerned, and so far as the superintendence of the work is concerned, as much the architect of the building as a modern architect is; but there was this difference: by working always with the same men, the master-mind was able to reach every stone of the building, instead of being master of the main outline only; and, what is even more important, the work had in its details the advantage of other minds also working in free servitude to the master-builder.

The question of materials is as important and almost as hopeless. We suffer in the first place from the invention, in these scientific and commercial days, of a number of cheap methods of preparing materials. The cheap method once having been introduced, it is difficult, if not impossible, to escape from it.

In the case of bricks, for instance. Every one now admits that a building does not look right, however well it may be designed, if it is built of bricks of the regular Midland shape,  $9 \times 4\frac{1}{2} \times 3$ , or  $3\frac{1}{2}$  inches. But the 3-inch brick works out much more cheaply than the  $2\frac{1}{2}$ -inch or 2-inch brick of old times. The perverse ingenuity of the inventor of the 3-inch brick has put a great difficulty in the way of Birmingham builders; a difficulty which cannot be avoided in the cheaper kind of buildings. Slates are another great difficulty in buildings in which cost is an important element. I have no fear of finding myself in a minority if I say that a roof built of the modern smooth, thin, evenly shaped Welsh slates cannot look well; but these slates are much cheaper to build with than heavy small slates, and the cheaper method being once known and practised it is impossible in many cases to revert to the older method, which alone is capable of beauty.

The Elizabethan mansion of Plas Mawr, at Conway, is roofed with Welsh slates, some of which are grey, some blue, some green, some purple. Yet it is, if I am not mistaken, quite a beautiful roof. But the slates are small, thick, uneven in shape, and all pointed in white mortar. Again, Normandy and other parts of Northern France are full of slate roofs, which are undoubtedly very beautiful. The slates in this case are thin and fairly smooth, grey in colour, but very small, and they lend themselves to the greatest beauty and delicacy of outline. In the port of Honfleur not only the roofs but the walls of the houses are covered with such slates, and, though rather gloomy, they look wonderfully well.

The point seems to be that even Bangor slates might be successfully used if they could be prepared and selected, not with machine-like regularity, but by the hands of men whose feeling and character had not been killed out of them by overmuch monotony and subdivision of labour. In woodwork the individuality of human feeling once found important scope. Who does not recognise the difference between the look of an adzed beam and one turned out die square from a saw-mill—whose eye lingers with pleasure over a modern half-timbered building? We may admire the form and proportion and the well-composed lines of the architect's design, but the admiration requires an effort; the saw-mill has taken the delight away from it.

It is not easy to see any remedies for these difficulties, at any rate on a large scale. In some few cases delightful work is done even now, but never, I expect, by the contract workman working under ordinary conditions. Skilful and intelligent as he is, he has lost his soul and become the slave of many masters.

I have so far omitted any reference to the question of ornamentation of buildings, partly because it did not come exactly under any heading, and partly because it is

perhaps the most difficult question of all; though in one sense it may admit of the easiest solution, because if we cannot fix upon any satisfactory scheme of ornament we can at least leave it out altogether. It seems to me that the position of the modern builder and architect is more difficult in this respect than it has ever been before, for several reasons.

First, there is the question of execution. The usual system is, I believe, for the architect to design the ornament, more or less roughly; and his designs are worked out by the workman, who in this way is continually working out the ideas of different minds. For reasons pointed out before, I believe this system cannot have satisfactory results. The mind and the hand must belong to the same man: either the architect must execute his own designs, or the workman must design his own work. I have seen an architect execute his own designs, though that is not often possible. For the workman living under modern conditions to make designs in which there shall be any real life or feeling or conviction seems at least equally impossible. Who ever looks with any real interest or pleasure at the decoration of a modern building? There are, I have no doubt, some exceptions to this rule. The late John Sedding's church in Sloane Square is, I believe, quite without lifeless ornament, and it is full of decoration; but in this case it is, I believe, true that every piece of ornamental work was done by what might be called a great man, a man of real and untrammelled imagination, a great sculptor, or painter, or other designer working from his own designs. This is probably what it comes to—no ornament at all, unless you can get a man of real imagination to do it—and that means in most cases none at all.

There remains the more restricted question of mouldings. Here the difficulties are different. It is true modern masons are so clever and modern appliances so highly developed that mouldings are apt to look as if turned out by a machine; but even if they did not, the chief difficulty would, I think, remain. In past times an architect or mason was born with a tradition. A certain style of moulding was universally used, and was actually in process of growth and development under the hand of every one who used it. It was, in fact, alive.

Now, there is no living tradition; each man has to pick his moulding out of a dead heap, or else invent a new one himself. Perhaps this does not apply to some of the simplest mouldings, because they arise directly, or almost so, from the needs of the case. A stringcourse, for instance, must be weathered at the top to preserve itself, and throated underneath to keep the drip off the wall below, and these necessities alone produce some sort of a moulding—that is, there are a few universal types which can hardly die because they are born of necessity every day. But the moment you leave the simplest forms, the difficulty begins. Can each man invent a new scheme or style of mouldings? I hardly believe it is possible; at any rate, it has not been done. Then he must use one or other historical type. That is, he must at once give, so to say, a false date to his building. The moment that a building or any part of it can be definitely labelled as belonging in style to any past period, it is, as it seems to me, so far condemned.

So that here, again, the conclusion seems to be, for the present, no ornament, or the least possible.

I ought not perhaps to come to a conclusion without attempting to suggest a way out of the difficulties which I have indicated, though I do so with great diffidence and hesitation, for the solution, if there is one, will lie in the general flux and change of things, and the exact form it will take it is impossible to prophesy. I have, however, already pointed to the only direction in which it seems to me an improvement can take place. Somehow or other, the barriers between architects or designers, builders or men of business and craftsmen, must be broken down. I



do not think it is possible to get again as complete a fusion of the different classes as there seems to have been in the old times; but, at any rate, it appears to be essential that some means should be found by which the same architect and the same men should permanently work together, and by which a larger and freer scope should be allowed to the intelligence and feeling of the men.

## LEGAL.

### The London Building Act, Section 212.

DUNSMORE v. MARSLAND.

At the Lambeth Police Court on the 4th February, before Mr. Hopkins, was heard the case of *Dunsmore v. Marsland*, an appeal by Mr. Gilbert Dunsmore, a builder, against a notice of requirements served upon him by Mr. Ellis Marsland, District Surveyor for Camberwell, in connection with the contemplated erection of some houses at Peckham Rye. The point at issue was whether the District Surveyor was entitled to demand that the buildings should be erected in accordance with the provisions of the London Building Act 1894, which came into operation on 1st January 1895, or whether the builder was entitled to proceed under the old Act.

Mr. Rose Innes appeared in support of the appeal, and Mr. Williams represented the District Surveyor. Mr. Innes said the parties were desirous of deciding what was the proper construction to be put upon section 212 of the London Building Act. Mr. Dunsmore was carrying on building operations, and prior to the Act coming into force Messrs. Stevens, who were the owners of considerable property at Peckham Rye, had agreed to let him for a period of something like ninety-nine years, at a rental of £50 per annum, some land upon which he had now built a number of houses, and upon which he was desirous of building four more. The difficulty raised by the District Surveyor was that there was no written contract between Messrs. Stevens and Mr. Dunsmore so as to bring the case within the decision in *Tanner v. Oldman* [antea, p. 75]. Counsel contended that it was perfectly immaterial whether the contract was in writing or not.

Mr. Dunsmore gave evidence as to the arrangements between Messrs. Stevens and himself.

Mr. Williams, on behalf of the District Surveyor, submitted that when the Act spoke of a contract it meant a valid contract which could be enforced between the parties. Under the Statute of Frauds a contract for the lease of land must be in writing. He contended that the arrangement between the parties was not a contract, because neither party could enforce specific performance.

Mr. Hopkins came to the conclusion that the houses were being erected under a contract made prior to the passing of the Act, and made an order discharging the District Surveyor's order.

#### Building Line: Building erected in substitution of formerly existing Building.

LONDON COUNTY COUNCIL (APPELLANTS) v. PRIOR (RESPONDENT).

This was a special case stated for the opinion of the Court by a metropolitan police magistrate, and heard by Mr. Justice Lawrance and Mr. Justice Collins on the 10th February.

The respondent had been summoned upon a complaint made by the appellants for beginning to erect, without leave of the London County Council, a building beyond the general line of buildings on the northern side of Prince George's Road, Stoke Newington, on 20th October 1894, contrary to 25 & 26 Vict. c. 102, s. 75; 45 Vict. c. 14, s. 10; and 51 & 52 Vict. c. 41.

The summons was first heard on 1st April 1895, and

adjourned until May 1895, when the magistrate dismissed the summons.

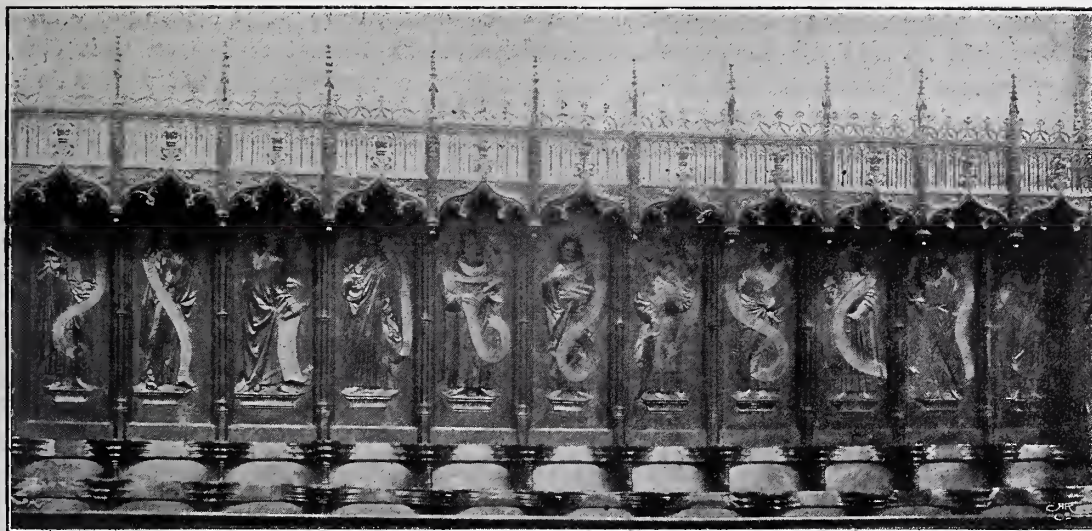
The respondent was a builder, and had begun to erect the building in the said road for the owner of the site. The Superintending Architect to the London County Council, by his certificate of 22nd January 1895, settled the general line of building in Prince George's Road, and decided the building in question to be within that road. The owner objected to this certificate, and appealed to the Tribunal of Appeal under the London Council (General Powers) Act 1890. The Tribunal confirmed the Superintending Architect's certificate, but held that the buildings in reference to which the general line of buildings had been certified were on land within the exceptions contained in the 33rd section of the London Council (General Powers) Act 1890, such land being the sites of buildings and land held with buildings existing at the time of the passing of that Act. The building in question was being erected partly upon the forecourts of two houses formerly existing on the site, and partly upon gardens at the back of the said houses. The forecourts between those houses and the Stoke Newington Road were about forty feet in depth, and the gardens were of greater length. The proposed building was seven feet beyond the general line of buildings in Prince George's Road. The magistrate was of opinion that the facts of the case brought it within the decision in *Lord Auckland v. The Westminster District Board of Works* and dismissed the summons, but stated a case, asking the Court whether upon the case as stated he was right in coming to this conclusion.

Mr. H. Ivory and Mr. F. F. Daldy for the appellants; and Mr. R. A. McCall, Q.C., and Mr. Alexander Macmorran, Q.C., for the respondent.

The Court allowed the appeal, and sent the case back to the magistrate to be dealt with. Mr. Justice Lawrance was of opinion that the facts were not within the principle of *Lord Auckland's* case. In that case there was a courtyard, probably only a small portion of the general building, with a high wall round. This yard was held to be part of the premises on which *Lord Auckland* might rebuild. In the present case there was a forecourt and garden to Nos. 83 and 85, and the owner claimed the right to build on them. It could not be done, however, if the building was in front of the building line. He was desirous of building on the forty feet of forecourt and on the garden at the back, which was perhaps double the length. All the cases showed that this could not be done.

Mr. Justice Collins said that he had some doubts at first as to whether the magistrate had not found as a fact that the facts of the case brought it within *Lord Auckland v. The Westminster District Board*, but on looking at the structure of the case it appeared that the magistrate had stated the facts and asked the Court as a question of law whether they were governed by *Lord Auckland's* case. There land, part of the purtenance of a house pulled down, was held to come under the word "building," so as to entitle the owner to say that he could build thereon. It formed part of the house. There were similar cases, however, in which the facts were found the other way. In the case of *Lavy v. The London County Council* (1895) there was a house and garden with a dwarf wall round. The owner built a large wall 11 feet high and 18 inches thick on the site of the old wall. According to the respondent's argument in the present case, he would have been entitled to erect a house there. But it was held that he had no right to build such a structure as he had put up. So far as a principle was to be gathered from the cases, it did not go beyond this, that a man was entitled to build a series of structures on the same site. But where there was a large area not built on, as here, when the forecourt was 40 feet in length, and the garden at the back longer, it must be taken as a point of law that they could not be part of the building.

Leave to appeal was granted.



## SAINT-PIERRE-ÈS-LIENS: THE ANCIENT CATHEDRAL OF GENEVA.

By LOUIS VIOLLIER [*Hon. Corr. M.*] and LAWRENCE HARVEY [*F.*]

Read at the General Meeting, Monday, 16th March 1896; and registered at Stationers' Hall as the property of the Royal Institute.

I.—By LOUIS VIOLLIER [*Hon. Corr. M.*], of Geneva.

MESSIEURS ET HONORÉS CONFRÈRES,—

**L**ORSQUE vous avez gravi une des vieilles rues conduisant au sommet de la colline sur laquelle était construite l'ancienne Genève, à votre gauche, au débouché d'une petite ruelle, se dresse devant vous un beau portique de style Romain. Six colonnes corinthiennes, surmontées d'un fronton, sont bien campées sur un vaste perron. Ce portique a grand air, formant le fond d'une petite place semi-circulaire appelée la "Cour de Saint-Pierre." C'est la façade de l'Église de Saint-Pierre, ancienne cathédrale de Genève sous le vocable de Saint-Pierre-ès-liens. Ce portique a remplacé, au milieu du dix-huitième siècle, l'ancien pignon Gothique qui menaçait ruine [see p. 319, fig. 6].

Si la grande porte centrale est ouverte, d'un seul coup d'œil on embrasse toute la nef et les bas-côtés de l'édifice qui offre un aspect remarquable de grandeur, en dépit de ses proportions réelles assez minimes. Y compris l'abside, le vaisseau n'a que soixante et un mètres de longueur. La largeur de la nef est de neuf mètres vingt centimètres; la hauteur des voûtes de vingt mètres au-dessus du sol de l'église.

La nef se composait primitivement de cinq travées; sur l'emplacement de la première a été construit le portique d'entrée. A droite et à gauche de l'abside, quatre chapelles rectangulaires, ouvertes sur le transept, terminent l'église au levant. Deux tours s'élèvent sur l'extrémité des bras de la croix.

Entre ces deux tours, sur la croisée, une charpente dépouillée de toute décoration est le reste d'une ancienne flèche qui a dû avoir des allures très grandioses, tant par sa dimension que son architecture. L'ogive et le plein cintre sont combinés de la façon la plus heureuse. L'église est régulièrement orientée de l'est à l'ouest.

Ceux qui prenaient la peine de faire le tour extérieur de l'église il y a vingt ou vingt-cinq



ans, pouvaient à juste titre être frappés de son délabrement, voire même de son peu d'intérêt architectural : au midi, la Chapelle des Macchabées, intérieurement divisée en trois étages, extérieurement dépouillée de toute décoration ; plus loin, les fenêtres de la nef privées de leur mouluration, tablettes et colonnettes ; une corniche du quinzième siècle retouchée au dix-huitième pour en faire disparaître la pierre fusée et donner à des profils gothiques un petit air Renaissance ; les bas-côtés défigurés par des contreforts larges, peu saillants, sur lesquels s'appuyaient mal des arcs-boutants chargés de lourdes demi-voûtes renversées.\*

L'abside et les chapelles des transepts conservent encore leur architecture moyen-âge, mais sont dans un état de décrépitude avancé. Des deux grosses tours, celle du midi, qui se trouvait au quinzième siècle en mauvais état, a été recouverte dans les premières années du seizième siècle d'un parement en roche dure. Elle est aujourd'hui en bon état de conservation.

La tour du nord, partiellement reconstruite vers le quatorzième ou quinzième siècle, nous était parvenue avec son couronnement démoli et couverte d'un toit provisoire. Sur toute la hauteur de la tour, cordons et bandeaux avaient disparu sous l'effort des éléments secondés par des tailleurs de pierre.

Un document de l'époque, retrouvé dans le pommeau de la tour, dit ceci :—“ En 1707, on commença les travaux qui durèrent plusieurs mois. La muraille méridionale de la tour fut presqu'entièrement refaite, les autres faces furent grattées et rejointoyées. On détruisit tous les cordons et moulures qui avaient survécu aux dégradations antérieures.”

Nous ne savons pas comment ces deux tours ont été terminées pendant le moyen-âge. Nous avons plutôt lieu de croire qu'elles ne l'ont jamais été complètement. Le style principal de l'édifice appartient à l'époque de transition.

La première “restauration archéologique,” c'est à dire, réparation faite en tenant compte de l'architecture primitive, eut lieu dans les années 1850 à 1860 sous la direction de l'architecte Blagnac : soit la réfection de deux fenêtres des bas-côtés sud et d'un contrefort adjacent avec la corniche qui les couronne ; à l'intérieur, restauration d'un beau groupe de stalles et restitution de la forme première de l'église par la suppression des galeries en bois, ajoutées après la Réformation, pour donner plus de places aux nombreux fidèles d'alors.

En 1875 et les années suivantes, sous la direction de M. Mercier, d'abord, puis de MM. Camuzat et Poncy ensuite, la restauration de la Chapelle des Macchabées fut entreprise et menée à bien. La Chapelle des Macchabées avait été élevée dans les premières années du quinzième siècle, par le cardinal de Brogny, qui l'avait richement dotée et avait créé pour elle un chapitre spécial.

En 1884, ce fut le tour de deux intéressantes chapelles du transept sud, dont une contient le tombeau du duc Henri de Rohan, le fervent défenseur des Protestants. De 1887 à 1888, l'intérieur de la Chapelle des Macchabées fut dégagé des deux planchers qui la divisaient en

\* Mr. Lawrence Harvey [F.] has kindly rendered M. Viollier's Paper in abstract as follows :—

After an ascent of one of the tortuous lanes leading up to the top of the hill on which stands Old Geneva, turning to the left, the visitor will notice a fine Roman portico. Six Corinthian columns, surmounted by a pediment, are firmly settled on a large perron. The portico has a noble appearance, and forms the background of a small open space called the Cour de Saint-Pierre. It is the façade of the Church of Saint-Pierre, the ancient cathedral of Geneva, bearing the name of Saint-Pierre-ès-liens. This portico took the place, in the middle of the eighteenth century, of the ancient Gothic gable, then in a ruinous condition.

When the large central door of the building is open, the

nave may be seen at a glance, as well as the aisles : the sight is impressive, in spite of the moderate size of the building. The apse and nave together make up a length of 61 metres, or about 200 feet. The breadth of the nave is 9 metres 20 centimetres, or 30 feet 9 inches. The height of the vaults is 20 metres, or 66 feet, above the pavement of the church. In ancient times the nave was made up of five bays. On the site of the first bay has been erected the entrance portico. On the right and the left of the apse four rectangular chapels, opening on the transept, terminate the church on the east. Two towers rise up at the extremities of the transept. Between these two towers, over the transept, an old, unadorned scaffolding is all that remains of an ancient spire, which was renowned for its beauty and its size. Pointed and semi-

trois étages, occupés longtemps par les classes de l'ancienne Académie et du Collège. Elle fut alors entièrement remise à neuf, décorée et consacrée au culte.

Enfin en 1890, la restauration générale de l'église fut décidée par un accord entre l'Administration de la ville et une Association fondée dans ce but et chargée de pourvoir à une partie des frais. Avant ces entreprises partielles et générales de restauration, la cathédrale de Saint-Pierre avait subi de nombreuses réparations, reconstructions, additions, transformations, travaux qui se sont répétés pendant le cours des siècles depuis sa fondation jusqu'à nos jours, et ont sensiblement modifié le plan de l'édifice à l'intérieur, mais surtout dans ses élévations extérieures.

Et maintenant qu'entendons-nous par "Restauration" ? Nous ne pouvons pas donner de définition absolue de ce mot, qui est susceptible de prendre une signification différente pour chaque cas. Mais pour le cas particulier de notre église, nous pouvons nous en tenir à la définition de Viollet-Le-Duc : "Le mot et la chose sont modernes. Restaurer un édifice, ce n'est pas l'entretenir, le réparer ou le refaire ; c'est le rétablir dans un état complet qui peut n'avoir jamais existé à un moment donné." Ce que l'on peut interpréter de la manière suivante : Réparer ou refaire toutes les parties existantes ou qui présentent des traces lisibles des époques primitives, sans chercher à rétablir une unité de style. Quant aux parties dont il ne reste aucun document et que l'on doit composer pour compléter l'église, leur restauration sera cherchée dans le style général de l'édifice, soit le style de transition ou celui des corps de bâtiment qu'elles sont destinées à compléter ; et l'on verra par la suite que cette exception devient presque plus importante que la règle, attendu que les travaux neufs à exécuter, c'est-à-dire le couronnement de la tour du midi et la flèche centrale, appartiendront au style Gothique de la dernière période.

Nous disons qu'il a été arrêté, non seulement de restaurer le monument existant, mais d'en achever les tours.

Les Genevois sont très attachés à leur ancienne cathédrale, et tout spécialement à leurs trois clochers. Mais depuis que le goût des arts a fait, croyons-nous, quelque progrès chez nous, depuis que l'on s'est mis à apprécier le style Gothique et à l'étudier, ces trois tours sans silhouette, couvertes de toitures provisoires, non seulement vieilles mais dégradées, inspiraient, si je puis m'exprimer ainsi, une sorte de compassion. Elles ne nous paraissaient pas représenter dignement l'histoire du vénérable monument et de la cité dont chaque Genevois est si fier. Notre génération a voulu prendre sa place dans l'histoire du monument ; elle a décidé d'achever les tours et de lancer vers le ciel une flèche nouvelle. Le travail est commencé . . . mais l'avenir, même le plus rapproché, ne nous appartient pas.

Avant le commencement des travaux, le Comité de notre Association reçut une lettre de la "Society for the Protection of Ancient Buildings," ayant son siège à Londres, accompagnée des statuts de la Société. La lettre n'est que l'application à notre église des idées contenues

circular arches are combined in the happiest way. The church is set from east to west.

The visitor who twenty or twenty-five years ago walked round the church was struck with its dilapidated condition and its want of architectural interest. At the south the chapel of the Macchabées was cut up into three storeys, and was externally free from ornament. Moreover, the windows of the nave were deprived of their mouldings, sills, and small columns. A cornice of the fifteenth century was re-worked in the eighteenth in order to remove the worn-out stone, and to give the Gothic outlines a touch of Renaissance.

The aisles were disfigured by broad but not deep buttresses, on which rested abutments loaded with heavy semi-vaults, their convex side turned down. The apse and

the chapels of the transepts still retain their Mediæval character, but are very dilapidated.

Of the two large towers the southern, which in the fifteenth century was in a bad condition, was cased during the first years of the sixteenth century with a facing of hard stone. It is now in perfect condition. The north tower, partly rebuilt about the fourteenth or fifteenth century, had reached us with its demolished coping, and covered with a provisional roof. Along the whole height of the tower, mouldings and stringcourses had disappeared, the result of the weather and the ignorance of workmen. In the ball at the top of the tower a MS. was found, stating that, "In 1707 was begun the restoration works, which lasted several months. The south wall of the tower was almost entirely rebuilt ; the other faces were scraped



dans les statuts. Lettre et statuts sont une protestation très énergique contre l'œuvre que nous voulons entreprendre, et que nous croyons encore devoir entreprendre sans tenir compte du chaleureux appel qui nous est adressé.

“ Devoir ” est le mot qui convient ici, car presque chacun de nous pencherait en théorie à partager les opinions de la Société pour la Protection des Anciens Monuments.

Malheureusement, dans la plupart des cas, on est réduit à cette alternative, ou de reconstruire ou de supprimer, soit de voir tomber en ruine. L'honorable Société nous paraît avoir un grand tort, c'est de faire abstraction des lois de la nature et s'imaginer que l'homme peut lutter contre elles à armes égales. Quelques soins que l'on prenne, jamais œuvre d'homme ne sera éternelle, même relativement. Le Créateur l'a sans doute voulu ainsi pour que chaque génération apporte sa pierre à la construction de sa maison.

Les monuments durent plus ou moins longtemps, suivant qu'ils ont été plus ou moins protégés contre les dégradations, les incendies, les transformations, suivant qu'ils sont plus ou moins abrités contre les intempéries, qu'ils sont élevés dans un climat plus doux, plus régulier, suivant qu'ils ont été plus ou moins soigneusement construits, avec des matériaux plus ou moins durables.

Il arrive donc tôt ou tard un moment où l'édifice arrive à un état de vétusté, de délabrement, d'instabilité tel que les hommes qui en ont la garde se posent la question : Que devons-nous faire ?

Dans les siècles passés, on eût démoli et reconstruit. Au commencement de celui-ci, on eût laissé tomber en ruines ou supprimé sans rien refaire ; aujourd'hui on restaure. J'avoue que le mot est déplaisant et souvent la chose aussi. Mais c'est un mal nécessaire.

De deux maux il faut choisir le moindre et nous restaurons, car nous considérons que dans beaucoup de cas, des réparations faites dans l'esprit de celles que l'on nous conseille sont absolument impraticables, et nous en pouvons donner pour preuve le monument qui nous occupe aujourd'hui.

Saint-Pierre a été en grande partie construit vers le treizième siècle, avec une mollasse provenant soit du lac de Genève, soit des environs de la ville.

C'est une pierre facile à travailler, assez dure quand elle est saine, d'un aspect agréable à l'œil, mais qui supporte mal les intempéries. Avec le temps, elle se désagrège sous l'influence de la pluie et du soleil ; elle se décompose à l'humidité et alors pompe l'eau, comme une éponge, dans toute sa profondeur.

Qu'est-il arrivé ? Avec les années, toute la mouluration, toutes les saillies sont tombées, surtout du côté le plus exposé à la pluie et aux vents. Les façades s'effritent et se fondent comme du sucre ; près du sol, elles s'emplissent d'une humidité qui se propage à travers l'épaisseur des murs jusque dans l'intérieur et lui communique le mal dont elles souffrent.

Autre éventualité : les fondations ont été mal faites, les contreforts insuffisants, les voûtes

“ and rejoined. All the stringcourses and mouldings “ which had survived prior degradation were destroyed.” We know not how these two towers were finished in the Middle Ages. We are inclined to believe that they have never been entirely finished. The main style of the building belongs to a Transition period.

The first “archæological restoration,” or scientific repairing, took place during the years 1850-60 under the direction of the architect Blavignac. It consisted in the reconstruction of two windows of the south aisle, and of a buttress adjacent, with the cornice above. In the interior a restoration was carried on of a fine group of stalls, and the wooden galleries which had been set up round the church at the Reformation were taken down.

In 1875 and following years, under the direction first of

M. Mercier, then of MM. Camuzat and Poncey, the restoration of the Chapel of the Macchabées was undertaken and carried out. The Chapel of the Macchabées had been erected during the first years of the fifteenth century by Cardinal de Brogny, who had richly endowed it, and entrusted it to a special Chapter. In 1884 the two interesting chapels of the south transept, the one containing the tomb of the Duc Henri de Rohan, the protagonist of the Prottestants, were restored. In 1887 and 1888 the inside of the Chapel of the Macchabées was freed of two floors, which divided it into three storeys, for many years occupied by the classes of the old Academy and of the College of Geneva. It was then entirely renewed, decorated, and opened to public worship.

Lastly, in 1890, the general restoration of the church

poussent en dehors, se fissurent : chaque siècle a procédé à quelque consolidation, mais le travail de destruction fait son petit chemin et il devient évident qu'un jour, éloigné sans doute, peut-être proche, un effondrement se produira. Faut-il attendre l'accident ? Non. On peut enrayer la marche des voûtes par des tirants en fer solidement ancrés à leur naissance. Mais notre avis sur ce sujet est que, tout particulièrement dans une église Gothique, l'intérêt artistique est à l'intérieur.

C'est à l'effet du vaisseau et de ses accessoires que tout l'édifice concoure. Ce qui fait la beauté d'une nef, c'est la hardiesse des voûtes qui naissent naturellement des piliers et sont comme un ciel de pierre sur nos têtes. Si l'œil voit les trucs qui le retiennent en place et l'empêchent de s'écrouler, le charme est rompu ; l'impression d'œuvre, pour ainsi dire sur-humaine, que les architectes du moyen-âge avaient réussi à produire, n'existe plus. Il faut donc éviter à tout prix l'emploi de tirants. C'est par le dehors qu'il faut retenir les voûtes d'une église, c'est dans ce but qu'existent les contreforts, les arcs-boutants, l'ensemble des façades mêmes.

Ce n'est pas toujours beau, un contrefort, et il faut savoir faire abstraction de bien des règles d'esthétique pour que l'œil s'habitue à ne pas considérer un arc-boutant comme une barbarie architecturale. Il faut cependant s'y résigner, c'est la manière la plus simple de faire tenir une nef Gothique. Autrement dit, l'extérieur est sacrifié à l'intérieur.

Nos ancêtres avaient commencé une basilique Romane, très probablement sans voûtes, ou avec de petites coupoles sur les travées des bas-côtés. Les contreforts primitifs étaient de simples pilastres. Ils ont eu l'audace pendant la construction de changer leur plan ; l'emploi de la voûte d'arête se répandait partout, ils ont voulu suivre la mode, la maudite mode. Ils ont changé quelques dispositions à leurs colonnettes, à leurs chapiteaux et ont construit tant bien que mal leurs voûtes d'arêtes. Une sorte de miracle a voulu que l'édifice ne s'écroulât pas et tint même fort longtemps sans gros désordre. Et cependant, le calcul mathématique de la poussée de ces voûtes ne leur permet pas de tenir debout !

Avec le temps, les mathématiques se vengent, les façades sont poussées en dehors, leur surplomb devient effrayant.

On procède alors à des travaux partiels de consolidation des contreforts. Le plus important de ces travaux eut lieu au dix-huitième siècle, mais il fut mal calculé et fut plus nuisible qu'utile à la stabilité de l'édifice.

C'est alors qu'on s'est décidé, non sans regret, à abandonner les anciens contreforts Romains pour le système Gothique à arcs-boutants. Il nous souvient encore d'une séance de notre Comité où l'architecte qui écrit ces lignes s'est vu obligé de plaider la suppression des anciens pilastres qui ornaient la façade des bas-côtés plus qu'ils ne la soutenaient et leur remplacement par de véritables contreforts, comme une nécessité regrettable au point de vue

was decided on. The City Council and a private Restoring Association combined to secure the ways and means for that restoration.

Prior to these general and special restorations, Saint-Pierre had undergone numerous repairs, alterations, additions, and transformations through the course of centuries. Both the internal and external aspect of the building have been constantly changing, the change being greatest externally.

What is meant by restoration ? No absolute definition can be given of the term. With respect to the restoration of Saint-Pierre, we will adopt Viollet-Le-Duc's definition. He says—"The word and the thing are modern. To "restore an edifice is not to maintain it, repair or re-do it ; "it is to re-establish it in a state of completeness which "never can have existed at any given moment." We inter-

pret it thus : Wherever legible traces of primitive periods have survived the wear and tear of time, these traces must be carefully preserved and repaired, regardless of their want of harmony with the building. The parts of the edifice of which there remain no traces, and which have to be entirely designed afresh in order to complete the building, should be designed either in the general style of the building, that is the Transition style, or in the style of the parts of the building the new structures have to complete. Thus the crowning of the southern tower and the central steeple should be carried out in the Gothic style of the last period.

It has been decided both to restore Saint-Pierre and to finish the towers. The Genevese are very fond of their ancient cathedral, and especially of the three towers. But with the development of taste, these three towers, so dilapidated and formless, have been looked upon by many



de l'unité et de la tranquillité des façades, mais comme une transformation que la plus simple prudence exigeait : les travaux l'ont bien montré [see p. 309, fig. 1].

Messieurs les membres de la Société pour la Protection des Anciens Monuments, dans le fond de leur âme et conscience, considèrent comme des barbares, comme des sacrilèges ignorants et irréfléchis, ceux qui pratiquent ou encouragent l'art difficile des restaurations ; mais nous leur dirons encore que la plupart des monuments qu'ils voudraient sauver à leur façon ne pourraient l'être qu'en les couvrant d'une cloche de cristal et, malgré les progrès de la civilisation, le procédé ne nous paraît guère pratique.

C'est, comme le disent fort bien les statuts de la Société, parceque notre siècle n'a pas de style à lui, que l'idée des restaurations est venue, et c'est déjà là un caractère de notre époque qui en vaut bien un autre.

Nous croyons que lorsque l'on complète un monument dans son caractère et dans son style, même d'une manière imparfaite, on montre une plus réelle compréhension de l'art que lorsqu'on déforme une église Gothique par des adjonctions Grecques ou Renaissance.

On nous répond : "L'art Gothique, comme tous les arts qui ont été le produit des circonstances, ne peut, pas plus que ces circonstances, être reproduit."

Ceci est du doctrinairisme pur : c'est vrai et c'est faux. On ne peut pas faire renaître l'art Gothique, mais on peut faire des œuvres partielles imitant l'art Gothique, et l'on en fait même de si parfaites qu'il n'y manque que la patine du temps pour qu'on les confonde avec les œuvres du moyen-âge.

Ces imitations parfaites, il est vrai, n'ont copié que les œuvres où l'art est arrivé à son état de complète formation, tant comme conception que comme facture.

Un art devient inimitable, si ce n'est par quelques spécialistes très habiles, par des faussaires de vieux bibelots, lorsqu'on le prend dans son enfance, dans sa période de tâtonnement, avec ses naïvetés et ses maladresses.

Et encore, l'architecture Gothique est-elle plus qu'un autre art le produit des circonstances ? Tous les arts sont le produit des circonstances ; ils seraient donc tous inimitables, ce que nous admettons volontiers d'une manière générale, mais non pas comme une spécialité de l'art Gothique. Les statuts disent encore :

Ce double procédé, qui consiste à détruire pour ajouter, traite l'ensemble de l'édifice de la façon la plus empirique ; il efface l'air même d'antiquité qu'avaient conservé les parties demeurées intactes, si bien que le spectateur est incapable de constater en toute sûreté ce qui a été véritablement perdu. Bref, le résultat final de tout ce vain travail est une œuvre sans force et sans vie, une mystification.

Nous voilà classés, nous n'avons rien à ajouter pour notre défense, nous sommes de petits écoliers qui salissent leur cahier sans comprendre leur tâche. Tous les hommes, qui depuis une cinquantaine d'années ont travaillé à des restaurations de monuments du moyen-âge, qui

with more compassion than poetical regret. They are not worthy representatives of the venerable monument of the city the Genevèse are so proud of. Our generation has decided to complete the towers, and to send towards heaven a new spire.

Before beginning the works our Committee received a letter from the London Society for the Protection of Ancient Buildings, together with its papers. That letter is an energetic protest against our restoration plans. In spite of that warning we have thought it our duty to go on with our work. We have two alternatives : either to rebuild, or to allow the building to fall to pieces.

The well-meaning London Society, in our humble opinion, commits a mistake in believing that man can check Nature. *Omnia mutantur, nos et mutamur in illis.* The life of buildings as of men is limited ; and they, like

men, are victims of time and of weather. Their original structure, solidity of materials, &c., are among the factors of their greater or lesser longevity. But the fatal time comes at last, and the most reverent spirits dolefully exclaim : what shall we do to rescue our building ?

In the Middle Ages people pulled down to rebuild ; at the beginning of this century buildings were left to moulder away ; nowadays the fashion is to restore—a dreary necessity in my opinion. The restoration of Saint-Pierre carried out on the lines suggested by the London Society would have been impossible.

Saint-Pierre of Geneva was mostly built up in the thirteenth century with a freestone (*mollasse*), taken out of the Lake of Geneva or from the neighbourhood of the town. "*Mollasse*," as its name suggests, is a soft stone, pleasant to the eye but unable to stand rough weather.

les ont étudiés avec l'attention la plus minutieuse pour reconstituer leurs débris, les relever de leurs ruines, les redresser et souvent aussi les achever ; tous ces chercheurs patients, artistes laborieux, ont été des gens dénués d'intelligence qui se sont emballés tête baissée dans une fausse route et non seulement ont perdu leur temps, mais ont causé un mal irréparable ; ils ont fait un vain travail, "sans force et sans vie, une mystification."

Qui sait ? peut-être la Société a-t-elle raison, peut-être sont-ce ceux qui font restaurer les anciens monuments, peut-être encore ni les uns, ni les autres. N'y a-t-il pas encore d'autres solutions à la question ?

Ce qui est certain, c'est que personne n'a raison d'une manière absolue : il y a du pour et du contre. En ces matières, comme en toutes choses, le nécessaire c'est que chacun s'éclaire selon ses moyens et fasse pour le mieux. Ceci admis, nous estimons préférable de reconstituer presque de toutes pièces une façade qui marche à sa ruine que de la laisser se détruire entièrement.

Lorsqu'elle est réduite à l'état d'un simple mur de pierres sans formes, cette façade ne parle plus à l'œil par ses lignes, ses jeux de lumières et d'ombres, à l'esprit par sa mouluration, sa sculpture, ses saillies qui marquent son histoire ; au cœur enfin, si le monument est pour quelque chose dans la vie du peuple qui le conserve.

Lorsqu'un édifice est réduit à cet état de détérioration, de destruction comme c'était le cas pour la plus grande partie de l'extérieur de Saint-Pierre, il ne parle plus, on est obligé de lui parler pour se faire illusion et de lui dire : "Vous êtes bien vieilles, mes chères pierres, et vous avez vu bien des choses et bien des gens : combien je vous regretterais si quelque téméraire touchait à vos reliques vénérées !"

Ce qui inspire alors de tels discours, ce n'est plus le sentiment, c'est la sensiblerie, état d'âme honnête, si l'on veut, mais qui conduit bien vite à déraisonner.

Nous l'avons dit, nous considérons, avec la Société pour la Protection des Anciens Monuments, toute restauration comme un mal, mais un mal rendu nécessaire par la négligence de nos ancêtres dans la construction, comme dans l'entretien.

Savez-vous ce qu'ils faisaient, nos ancêtres, et ce que l'on fait encore souvent de nos jours chez nous ?

Quand la surface de la pierre, parement uni, colonne ou moulure, est vermoulue, se délite, on procède à un "ravalement," c'est-à-dire qu'on enlève un, deux, ou trois centimètres de pierre et le bâtiment est remis à neuf pour un temps, seulement on a amaigri toutes les formes. Cinquante ans plus tard, même opération ; il ne reste bientôt plus rien de la mouluration, on la supprime complètement alors et voilà de nos vieux souvenirs du passé, de cet art vénérable ce que nous croyons admirer.

Non, décidément, nous ne nous sentons pas de si grands coupables. "La restauration efface l'air même d'antiquité." C'est vrai et c'est certainement là notre plus grand regret. A Genève surtout, nous avons été contraints par la force même des choses à faire un travail

It gets spongy and soapy with time. The walls exposed to the rain have crumbled away. Moreover, the foundations have been badly made, the buttresses are too weak, and the vaults consequently have split up. Every century the Genevese have done something to keep up their cathedral, but the time had come when a sudden general collapse would not be an improbable occurrence. We have desired to take time by the forelock and to anticipate a catastrophe. We might have tied the arches with iron rods ; but we think that the main interest of the building lies in the interior, and that no ties should disfigure it. The nave, a kind of heavenly vault, must not be *visibly* trussed up. Therefore, external buttresses are, after all, the best way of strengthening the nave and doing justice to the shell of the building.

Our ancestors had begun a Romanesque basilica, probably without vaults, perhaps with little cupolas over the aisles. The primitive buttresses were simple pilasters. But, the fashion being in favour of ribbed vaults, they thought of starting vaults, after changing some of the small columns and capitals. In spite of the laws of statics, the building held its own for a time ; but the walls were at last thrust out of the perpendicular. Buttresses were then built. In the middle of the eighteenth century the largest of them were erected, but according to wrong statical calculations, and they have proved an evil rather than a help.

We have therefore done away with the Classic buttresses, and put in their place Gothic abutments, in opposition to the principles of our learned friends of the London Society. Their contention, we are aware, is that Gothic art cannot



très complet de remplacement ; nous avons dû changer jusqu'à la nature même de la pierre, renoncer à la mollasse pour lui substituer une roche dure, une sorte de marbre.

La mollasse rougeâtre, d'un grain serré, qui a servi à la construction de toute l'ancienne Genève, sans être parfaite, est une pierre relativement bonne ; on en eut sans doute conservé l'emploi au moins pour les parties qui ne souffrent pas trop, mais le mal est sans remède : cette pierre n'existe plus. Les autres mollasses dont l'usage est courant aujourd'hui sont d'une couleur fort différente et de fort mauvaise qualité, au point que les employer eut été faire action malhonnête.

On nous dit enfin : " Si on nous demande de préciser le genre d'architecture, le style ou " tout autre source d'intérêt qui recommande un édifice à la protection, nous répondrons : Tout " ce qui mérite d'être appelé artistique, pittoresque, ancien, éternel." Et nous répondrons à notre tour : Des murailles qui ont perdu toute leur architecture ont cessé d'être artistiques. Pittoresques ! de vieux toits provisoires posés sur une tour attendant une reconstruction qui n'est jamais venue, peuvent peut-être être baptisés du nom de " pittoresques." Mais ce genre de pittoresque est-il bien celui qui convient à un édifice monumental ? Non !

" Historiques ou anciennes." Dans le sens que depuis fort longtemps elles étaient en place, elles sont historiques et anciennes. Mais dans les temps reculés de l'histoire elles ne l'étaient pas sous leur forme actuelle, leur aspect a changé. Comme les momies, on peut les conserver dans un musée, mais au soleil elles ne représentent pas plus une page d'histoire ou une œuvre d'art qu'une momie, un puissant Pharaon.

N'est-ce pas plutôt pitié que de relier d'une couverture de parchemin un vieux manuscrit rongé des souris ? Cette couverture, on la fait aussi belle que possible pour témoigner de l'intérêt qu'on porte au trésor qu'elle protège.

" Eternel." Est-ce le monument que l'on croit pouvoir être éternel, ou le genre d'architecture, le style ? Nous pensons qu'il est question de beauté s'approchant tellement de l'idéal qu'on la considère comme éternelle.

Nous avons entendu souvent exalter par des connoisseurs certaines œuvres d'art au plus haut degré et pour ainsi dire les consacrer à l'admiration éternelle de l'humanité, mais nous avons de bonnes raisons pour être un peu sceptique à cet égard. Il nous semble que l'homme est trop enclin à fouler aux pieds un jour ce qu'il adorait la veille, porter aux nues aujourd'hui ce qu'il méprisera demain, pour croire à ce beau idéal immuable.

Évitons donc les jugements absolus en matière d'art, plus encore que dans tous les autres domaines. Si l'on venait à nous en nous disant : " Prenez garde, nous savons que dans bien " des cas on a détruit à faux, inutilement, pour faire soi-disant mieux : nous nous permettons " d'attirer votre attention sur l'intérêt que peuvent avoir pour l'étude de l'histoire de l'art ces " documents authentiques, sur la poésie dont sont imprégnées toutes ces vieilles constructions.

nowadays be reproduced, for it is the creature of circumstances which have ceased to exist. This is a mere assumption. Gothic art cannot be reproduced as it appears in its period of evolution. It can be reproduced or imitated as it stands in its time of complete maturity, with the exception of the hallowed patina vouchsafed by Time. As a general statement we deny that Gothic art is more than any other form of art a creature of circumstances.

The London Society is very severe on all restorers. We shall not return the compliment ; we sympathise with their loving conservatism ; but we cannot help thinking them too absolute when they make no allowance for circumstances of which Greek art, Latin art, Gothic art, as well as they and our poor selves, are *creatures*, and must be content to remain. Therefore we have rebuilt a façade stone for stone as we found it, rather than enjoy the

melancholy satisfaction of seeing the old façade, with all its features blurred and meaningless, die a natural death.

Our ancestors had several times cleaned down the outside — that is, scraped away several centimetres of the façade, destroying almost everything wind and rain had left of the mouldings. The antiquity of the mouldings has disappeared, for the mouldings are no longer there to proclaim their antiquity. We are sorry for it.

The Society for the Protection of Ancient Buildings tells us that whatever is artistic, picturesque, historical and of eternal value should be preserved. We answer that walls which have lost all their architectural features have ceased to be artistic ; that the provisional roofs which protect the towers may be picturesque, but have no right to remain in a finished building. As to the eternal artistic value of anything, we have seen so many changes in taste, that we

"A moins de nécessité absolue, n'y touchez pas ou ne faites que les restaurations les plus urgentes pour la solidité ou la durée de l'édifice," on parlerait ainsi le langage de la raison.

Pourquoi encore vouloir interdire de terminer au dix-neuvième siècle un édifice qui est l'œuvre de tous les siècles ?

Sommes-nous vraiment plus incapables et plus stupides que les générations qui nous ont précédés ? Nous ne sommes pas des juges bien impartiaux, c'est vrai, mais nous ne le croyons cependant pas.

Si nous sommes en présence d'un monument d'un intérêt purement archéologique, une ruine abandonnée, nous sommes pleinement d'accord : empêchons la ruine de s'aggraver et c'est tout. Mais si ce monument fait partie de notre vie, s'il nous appartient comme il a appar-



FIG. 1.—NEW BUTTRESSES, SOUTH ELEVATION.

doubt the eternal duration of any opinion as to the beauty of anything.

Saint-Pierre of Geneva is a cathedral which is still the palladium of the Genevese Republic; it has duties to perform; it must stand on its legs. Had it reached the irrecoverable stage of a picturesque ruin we should willingly obey the strong appeal of our London friends—Hands off ! But again we say we are the creatures of circumstances, and our circumstances compel us to make our old Saint-Pierre as strong as possible to stand up bravely against the buffets of wind and water.

During the Middle Ages the Cathedral of Saint-Pierre-ès-liens was several times overhauled and rebuilt on older structures, numerous vestiges of which have been found (see Dr. Gosse's learned report [in the Library] published by the Association for the Restoration of

Saint-Pierre). The architecture of the church has been modified by these antecedent structures. Mouldings and sculpture in the interior bear marks of these varied and successive restorations. The Mediaeval artists adapted their own ideas to the general harmony of the church, making concessions to the conceptions of their predecessors—Saint Pierre thus presents a lovely and picturesque example of the principle of *variety in unity*.

The aisles and the great western pillars of the nave are the oldest parts of the building; they are the remnants of a primitive church, but have been built on principles differing from those adopted by later builders. Here may be noticed the Roman-Byzantine style of an old vaultless basilica. The main arches are pointed. The vaults of the nave are on a square plan, and the vaults of the aisles cover elongated rectangular spaces. Remarkably fantastic



tenu à d'autres, toute espèce d'hésitation tombe : nous avons le droit et parfois le devoir de le réparer et de le terminer.

Pendant le moyen-âge, la cathédrale de Saint-Pierre-ès-liens a été maintes fois remaniée. Construite sur les restes d'édifices plus anciens dont de nombreux vestiges ont été retrouvés dans le sol (pour lesquels nous renvoyons à la savante étude de M. le Docteur Gosse ; 3<sup>me</sup> fascicule de la publication de l'Association pour la Restauration de Saint-Pierre), son architecture a probablement subi dans certaines parties l'influence de ces anciens monuments. La construction a été interrompue, reprise par d'autres, à différentes époques, et présente à l'intérieur même plusieurs caractères très différents de style, tant mouluration et sculpture que disposition.

Disons tout de suite à la louange des artistes de ces temps reculés qu'ils ont parfaitement su tenir compte chacun des idées de leurs prédécesseurs. Ils nous ont laissé un ensemble très harmonieux, un vrai bijou de pureté de lignes, de belles proportions.

Les divergences de conception et d'exécution n'apparaissent qu'à l'étude du détail, et pour nous, loin de diminuer la valeur du monument, le rendent excessivement intéressant en lui assurant une bonne dose de pittoresque et de vie.

Les bas-côtés et les grands piliers occidentaux de la nef sont les parties les plus anciennes de l'édifice. Ce sont les restes d'une église primitive ou, tout au moins, elles ont été construites sur des principes tout différents de ceux qui ont dirigé les constructeurs suivants. Dans cette partie, c'est le Roman-Byzantin, c'est l'ancienne basilique sans voûtes. Les arcs-doubleaux sont en ogive, les grandes travées sont sur plan carré et les travées des bas-côtés sur plan barlongs ; de remarquables chapiteaux fantastiques décorent ces piliers [see p. 314, fig. 3].

Toute cette partie ancienne de l'église laisse transpirer une influence Italienne très sensible. Partout ailleurs c'est l'école Bourguignonne qui a la haute main, c'est son caractère sévère agissant par grosses masses lourdes, mais bien assises ; c'est la tendance à conserver certaines allures Romanes, Romaines même à l'époque où le Gothique Français avait atteint l'apogée de sa formation, comme art absolument indépendant du passé.

Ce sont les grandes lignes horizontales bien accentuées qui persistent, les murs pleins, les piliers massifs, les archivoltes Romaines, les pilastres cannelés, etc.

A l'extérieur les divergences de style sont bien plus grandes encore. Il n'y a plus d'unité. Toute l'histoire de l'architecture s'y retrouve, depuis le Roman-Byzantin jusqu'au portique renouvelé des Romains au dix-huitième siècle.

L'intérieur de l'église est bien conservé, il n'y a rien à restaurer ni à compléter, il n'y a que des pierres délitées ou spongieuses à remplacer, tandis que l'extérieur, qui a été si souvent réparé et reconstruit, se trouvait dans l'état que nous avons dit.

Nous avons dit que nous nous étions imposés de refaire chaque partie, non dans un style Gothique général, mais dans le caractère de l'époque à laquelle chaque élément appartient. De là de nombreux problèmes résultant des reconstructions successives de l'église dont chacune a laissé des traces qui s'enchevêtraient les unes dans les autres.

Il n'y a plus de théorie qui tienne, quelque parti qu'on adopte pour tel motif, peut être à juste titre critiqué pour un autre. Et c'est vraiment là où il paraîtrait justifié de suivre les

capitals adorn the pillars. The whole of this ancient part of the church is traceable to a very marked Italian influence. Elsewhere the Burgundian style is prevalent, massive, and strong. Horizontal lines, uninterrupted walls, massive piers, Roman archivolts, fluted pilasters—such are the main characteristics of that part of the building.

The exterior is more variegated still. The history of architecture may be read on the walls, from the Roman Byzantine down to the renovated style of the Roman portico erected in the eighteenth century. With the ex-

ception of a few porous stones to be replaced, the interior is in perfect condition. As we have made up our minds faithfully to replace the worn-out parts in the form they presumably had at the outset, numberless have been the problems which are the outcome of the numerous alterations the building has been subjected to. Our work has laid open to view many a detail that has been a guidance to the former state of the building, and thus our partial destruction has been the guiding-star of a truthful archaeological reconstruction. Unfortunately our funds have not

conseils de la Société pour la Protection des Anciens Monuments et de ne rien faire si à la meilleure théorie on ne pouvait en opposer une autre tout aussi bonne.

Comme compensation, ces bouleversements de pierres ont mis au jour plus d'une donnée intéressante sur les états primitifs de l'église ou des monuments qui l'ont précédés : chapiteaux, bases et fûts de colonnes, balustrades, restes Romains. Ces documents très intéressants ne sont malheureusement pas suffisants jusqu'à présent pour reconstituer d'une manière précise l'histoire des tours de l'église qui ont subi les transformations les plus considérables.

Quelques mots maintenant des parties entièrement nouvelles ou renouvelées sans le secours de documents complets.

Nous avons déjà parlé des contreforts qui contrebutent les voûtes de la nef. Il ne nous reste donc à parler que du couronnement des tours et de la reconstitution de la grande flèche de la croisée, car quelques chéneaux, quelques chapiteaux exceptés, tout le reste de la restauration s'est fait sur des données certaines. Tous les cordons, les bandeaux, les tablettes de fenêtres ont laissé, à un endroit ou à un autre, la trace de leur existence et l'image de leurs profils. Nous arrivons à cette phase d'une restauration qui consiste à terminer l'ouvrage resté inachevé ou détruit.

C'est la tâche qu'a entreprise l'Association de Genève pour des raisons qui ne sont pas de simples raisons de vanité ou d'art. C'est le sentiment patriotique et religieux qui a conduit le mouvement, bien plus que l'idée purement esthétique de donner une silhouette à nos trois tours. Nos Protestants sont peu formalistes et les églises et en général le culte jouent un rôle secondaire dans leurs croyances. Mais en présence d'un matérialisme audacieux et du catholicisme militant qui les débordent de toute part, ils ont senti le besoin d'affirmer leur existence à la face du ciel, et en peu de temps ils ont trouvé l'argent nécessaire pour entreprendre et presque pour terminer l'œuvre. Ce sont là des raisons suffisantes pour autoriser un petit attentat à la religion de quelques archéologues.

Mais là encore, c'est à l'archéologie que nous avons recours pour ce travail. Nous ne voulons pas faire une flèche en style moderne puisque, nous dit-on, notre siècle n'a pas de style. Et quoique nous ne puissions pas nous vanter de manier l'architecture Gothique comme ceux qui, au moyen-âge, en faisaient le seul but de leur vie, au moins chercherons-nous à nous inspirer de leur art et à l'imiter suffisamment pour que les parties nouvelles fassent, au moins à distance, corps avec l'édifice.

Cette manière de comprendre l'architecture est un des chapitres de l'histoire du style du XIX<sup>ème</sup> siècle. Entre les deux tours élevées sur l'extrémité des transepts se trouve encore actuellement une troisième tour en charpente recouverte d'écailles métalliques. Pour l'œil, cette construction difforme ne représente rien, et c'est cependant le reste d'une flèche grandiose qui s'élevait sur la croisée de l'église et avait eu probablement pour mission de remplacer, par sa hardiesse, les flèches des tours que l'on n'a pas osé exécuter à cause du peu de stabilité qu'offrait la base de celles-ci.

Cette flèche a été tronquée à une époque inconnue parce qu'elle résistait mal à l'effort du vent, nous affirme un vieux document. Un autre document nous donne un devis pour une reconstruction projetée au quinzième siècle : le devis indique également la hauteur au-dessus

been sufficiently abundant to enable us to trace out with absolute certainty the architectural genesis of the towers.

With respect to parts we have built up unaided by previous documents, we beg to say that besides the buttresses already mentioned as undertaken, we are bound to deal with the crowning of the towers and with the erection of the large spire over the transept. With the exception of some leaden pipes and some capitals, the rest of the restoration has been carried out according to positive antecedent data. All the stringcourses and

the sills of the windows have here and there left marks of their former selves. The parts of the building left unfinished, or destroyed, are to be built up according to the style of each part.

Saint-Pierre is the monumental embodiment of Genevese patriotism. In its walls Geneva's religious enfranchisement and Republican liberties took their origin. It is in no spirit of fanaticism or of vanity that Geneva wishes to restore its cathedral. Genevese patriotism wishes to maintain intact this witness of the Republic's long life.



du sol, soit 205 pieds. Telles sont nos données ; nous possédons toute la charpente de la partie prismatique et le départ de la flèche proprement dite. Le problème consiste : en premier lieu à reconstruire une charpente solide que nous ferons en fer, ensuite à lui donner un vêtement en bois décoré de métal semblable à celui qu'elle avait dû posséder au moyen-âge.

Quelques raffinés dans l'art des restaurations nous blâmeront sans doute d'employer le fer dans une construction moyen-âge et voudraient que non seulement l'apparence extérieure, mais la construction même des parties cachées ou à peine entrevues soient la fidèle reproduction des œuvres du temps. Nous ne pensons pas que cette manière de procéder soit la meilleure ; nous avons des avantages sur les procédés qu'on employait au moyen-âge, nous pouvons faire plus solide et plus durable ; profitons de nos ressources, car nous n'avons nulle intention de faire croire à nos petits-enfants que nous n'avons pas touché aux monuments anciens, que nous les leur transmettons tels qu'ils nous ont été livrés par nos pères. Nous ne voulons pas faire une mystification. . . . Et maintenant passons la plume à notre excellent collègue, Monsieur Lawrence Harvey, qui a étudié notre cathédrale avec tant d'amour et a fait sur sa construction les plus intéressantes observations.

LOUIS VIOLLIER.

## II.—By LAWRENCE HARVEY [F.].

IN his Lectures on Architecture the late Sir Gilbert Scott spoke of the Cathedral of Geneva as one of the most remarkable examples of the Transition period of architecture—that is to say, of the transition of the Western development of Byzantine architecture, which we in England call Norman and the Continentals call Romanesque, to the new style of architecture called Gothic. I have not Scott's work in my hands, but I have some remembrance that he regretted that no archaeological study of this building had been made.

In coming to reside for some time in Geneva I thought I could not better employ my leisure than in preparing for my colleagues of the Institute a careful description of this building. For this purpose I called on Monsieur Viollier, the architect entrusted with the restoration works now in progress on the Cathedral of Geneva. Although I was at the time unknown to Monsieur Viollier, as soon as I mentioned that I was a member of the Institute and had stated the object of my visit, he took up the matter most warmly. He placed at my disposal his own documents and those in the possession of the municipality, and made room in his office for me, so that I might prepare my Paper and the accompanying drawings with all the sources of information at hand.

To get some views to illustrate my Paper I asked my friend Pastor Weber, who is an amateur photographer, whether he would undertake to photograph for me some of the principal features of the building. He entered into the idea with enthusiasm, and prepared for this Paper the unique collection of photographs which I have the honour to submit to you. By the inspection of these photographs you will get better acquainted with the details of the Cathedral of

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The spire we intend to erect shall, as far as we can imitate Gothic art, harmonise with the rest of the building. The middle tower is a stump, covered with tin-plating, on which in former times a superb spire was erected. The pressure of the wind, according to an old MS., was too strong for the strength of its base, and so it was cut down. Another MS. states the estimates for the rebuilding of the spire in the fifteenth century. It was to rise up 205 feet above the ground. The base of that

future spire shall be our starting-point. We shall erect a frame of iron, then clothe it with wood and adorn it with a metal structure in a style similar to that of the original spire. We shall use iron instead of wood, because iron has material and statical advantages over wood. We shall use iron instead of wood, though the Middle Ages never used iron for framings, for we do not intend suggesting to our grandchildren that our nineteenth-century work is a Mediæval structure.—L. H.

Geneva than anybody could have been before they were made, Monsieur Viollier and myself included. The time devoted to the preparation of this collection only a man of leisure could possibly have spared. Some of the photographs are taken in dark corners, and have required as much as four or five hours to imprint their image on the negative, and all have required more or less long poses. Pastor Weber begs me to present this collection to the Library of the Institute.

Before entering on the study of the Cathedral of Geneva, a few words on the history of the city are necessary. Geneva passed under the dominion of the Romans 121 years B.C. About 59 B.C. Julius Cæsar hurried to Geneva to prevent the Helvetians crossing the Rhône and invading the Roman province; and it was from Geneva that Cæsar started to discover Gaul and Britain. At that time Geneva was the meeting-point of the *Provincia Romana* or Latin race, Gaul or the Celtic race, and Germany or the Teutonic races. Geneva is exactly the same now. In its streets French, German, and Italian are equally heard, and English is by no means rare, as several thousands of our fellow-countrymen reside there.

Christianity was brought to Geneva by Dionysus and Paracodus, Bishops of Vienne in Dauphiny, in the middle of the fourth century; and Geneva remained for a long time part of the diocese of the Bishops of Vienne, a point which is of great importance in following up the history of the cathedral. From 406 to 413 Geneva became a Burgundian city. The marriage of Clotilde and Clovis, King of the Franks, was celebrated in Geneva. It was at that time that the Geneva church of Saint-Pierre was erected on the foundations of the Temple of Apollo. In 544 the Franks obtained possession of Geneva. In 879 Charles the Fat, great-grandson of Charlemagne, established the episcopal constitution of Geneva, empowering the citizens to elect their bishop from among their clergy. About this time the second church of Saint-Pierre, of which there are no remains in the present building except stones that have been re-used for other purposes, was erected. Some capitals of this former church have been found and preserved in the Archæological Museum. They seem like very rough sketches of the capitals of the present church.

At the end of the tenth century the Emperor of Germany was crowned King of Burgundy in the Cathedral of Geneva, and hence came the eagle which adorns the coat of arms of the city. Then followed centuries of struggle for power between citizens, bishops, neighbouring sovereigns of Savoy and France, and the Swiss Republics of Berne and Fribourg, where alliances of all kinds took place; and sometimes one, sometimes the other, had the upper hand.

During the middle ages Geneva was an important market. Its fairs were attended from all parts of Europe. It was always in close connection with Italy, as may be seen by the fact that it contained a special church for the Florentine merchants (*Chapelle des Florentins*), from which the splendid stalls now seen in Saint-Pierre were taken [see *Headpiece*, p. 301]. It lay on the high road from Germany to Italy; and Pope Martin V., after being elected Pope by the Council of Constance, stayed three months in Geneva on his way back to Rome.

From the above sketch of the history of Geneva during the Middle Ages it will readily be



FIG. 2.—CALVIN'S CHAIR, PRESERVED IN THE CATHEDRAL.



conceived that the Cathedral of Saint-Pierre, in the course of centuries, has come to bear the marks of various schools of artists and craftsmen. I must leave to archæologists to decide whence the different features of the Geneva fane are derived. As an architect I will limit myself to discovering the thoughts of our predecessors of seven or eight centuries ago, and try to learn from them useful lessons for our own practice.

The most striking characteristic of the interior of Saint-Pierre of Geneva is that it looks very much larger than it really is; and in that particular it forms a curious contrast with

St. Peter's at Rome, which looks very much smaller than it is. To find out by what artifice the builders of the Geneva Cathedral obtained the optical illusion which exaggerates its appearance of spaciousness, I undertook, more than a year ago, a careful survey of the building, of which the plan and section accompanying this Paper are the results.

The measurements I took in making the plan have also revealed to me the method used in Saint-Pierre for deviating the centre line of the apse, symbolical of the inclination of the Saviour's head on the cross. This feature is to be found in many of the churches of the neighbourhood, such as the Cathedral of Lausanne, where it is much more visible than in the Geneva fane.



FIG. 3.—PIER 1, AGAINST WALL OF NORTH AISLE.

What is peculiar in the plan of the church is that the nave is divided by bays into square spaces, and the aisles follow suit with vaulted spaces covering narrow rectangles. This feature is only to be found, as far as I know, in mediæval churches on the Continent south of the Alps. There are several examples in Lombardy. The Romanesque churches of the Rhine country are planned on the system of naves divided into square spaces, and aisles also divided into square spaces, each bay of the nave comprising two of the aisles. The Gothic churches of France are planned on the system of the aisles being divided into square spaces, whereas the nave is divided into elongated rectangles, the short sides of which correspond to the bays of the aisles. Such is the system of construction followed in the nave and aisles of Westminster Abbey. Several modern churches in England are planned on the system employed at Saint-Pierre of Geneva—that is, with wide bays and narrow aisles—but they are usually covered with timber roofs, and not vaulted. It may be that this peculiar feature in the Geneva plan

is due to similar reasons, viz. that when the building was laid out, only a timber roof was contemplated. Several other features confirm one in this opinion.

As the most important of these evidences I consider the absence of buttresses to resist the thrust of the vaulted ceiling. From an old print made in 1749, before the erection of the portico, and from the pencil drawing made by the architect who designed the portico, one can see that the west front of Saint-Pierre was formed of a plain wall, relieved by shallow pilasters, as may be seen in several of the churches of North Italy, but without buttresses or any features intended for taking the thrust of the arches. It is really a marvel that this wall did not come down as soon as the vaulting was completed.

This marvel is only to be explained by the material used in the vaulting. In consequence of a suggestion for the decoration of the church, the plaster was removed from a part of one of the ceilings of the nave. It was found that the cells were filled in with regular courses of tufa, arranged according to the French plan, such as may be seen in the Cathedral of Laon, where cross and diagonal ribs are divided into an equal number of parts, each part being con-



FIG. 4.—PIER 23, FROM CHAPEL EAST OF NORTH TRANSEPT.

nected by a course of stones supported by a board on edge cut to a curve. At Laon the rise of the curve is 3 in 100; at Geneva it is 8 in 100. This very pronounced curve of the jointing explains why the upper part of the cell exhibits no mitre, a property which has been found out in the Class of Masonry I had the privilege to direct when I was in London.

Tufa is a particularly light stone, resembling closely a hard sponge, and offers a very firm grip to mortar. For this reason it is probable that long before the centering of the arches was removed, the vaulting of Saint-Pierre formed a nearly homogeneous cake, like a vault executed in concrete. The roughness of the work shows that the vaults were intended to be plastered; and it prevented all idea of decorating the vaults by simply removing the plaster and leaving the stone face naked, as in Westminster Abbey, and also in the Cathedral of Laon—a fact which I regret, as I think the stone structure of a vault one of its important features.



In considering closely the piers, capitals of shafts, and vaults above the aisles of the church, Monsieur Viollier and myself think we have found some further evidence of its having been intended to be covered by a timber ceiling. The capitals of the shafts which take the diagonal ribs of the vaults of the aisles in the piers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 21 are all square with the walls. Only on piers 18, 19, 20 are the capitals square with the direction of the diagonal rib. Moreover, connecting the said shafts on the east side of piers 13 and 14, we find the remains of a second ring to the cross arch 13, 14, a ring which is absent from all the other cross arches of the aisles. We venture to conclude from this that from the west front up to piers 13, 14, 15, 16, the shafts which now take the diagonal ribs of the vaulting received only the outer ring of the cross vaults, an outer ring which was removed when the vaulting was used to replace the former timber ceiling.

Arrived at that point of piers 13, 14, 15, 16, there was a change of management in the works, as evidenced on the one hand by the interruption of the archivolt of arch 14-19, which, beginning at the west end by a few shallow mouldings, is succeeded by a deep gorge; and, on the other hand, by the change in the character of the carving. To the west of this point, the ornamentation of the abaci of the capitals has a conventional Byzantine character—sometimes it closely follows Greek models; whereas to the east of this point, in the transepts, chapels, and choir, the carving is of a more naturalistic character. Another detail characteristic of the earlier carving is the plaited cord which encircles the throats of the capitals, cord which is replaced by plain rings in the later work. Curious features are the abaci in the form of plaited baskets which crown the capitals of the most western piers now extant in the north aisle [see p. 314, fig. 3].

It will be seen that in the bay 13, 14, 18, 19 of the north aisle the diagonal rib used was of square section with beads, of the same type as the diagonal ribs used in the chapels east of the transept and in the nave of the church. In all other bays of the aisles the ribs used are of triangular section, with beads on the edges. It may be supposed that the new architect of Saint-Pierre tried his first vault in the bay 13, 14, 18, 19 of the north aisle—a fact confirmed by the presence of the only real old buttress at that point—and, finding how awkward the square section of rib was for springing from the old square capitals, *he invented the triangular rib* used elsewhere.

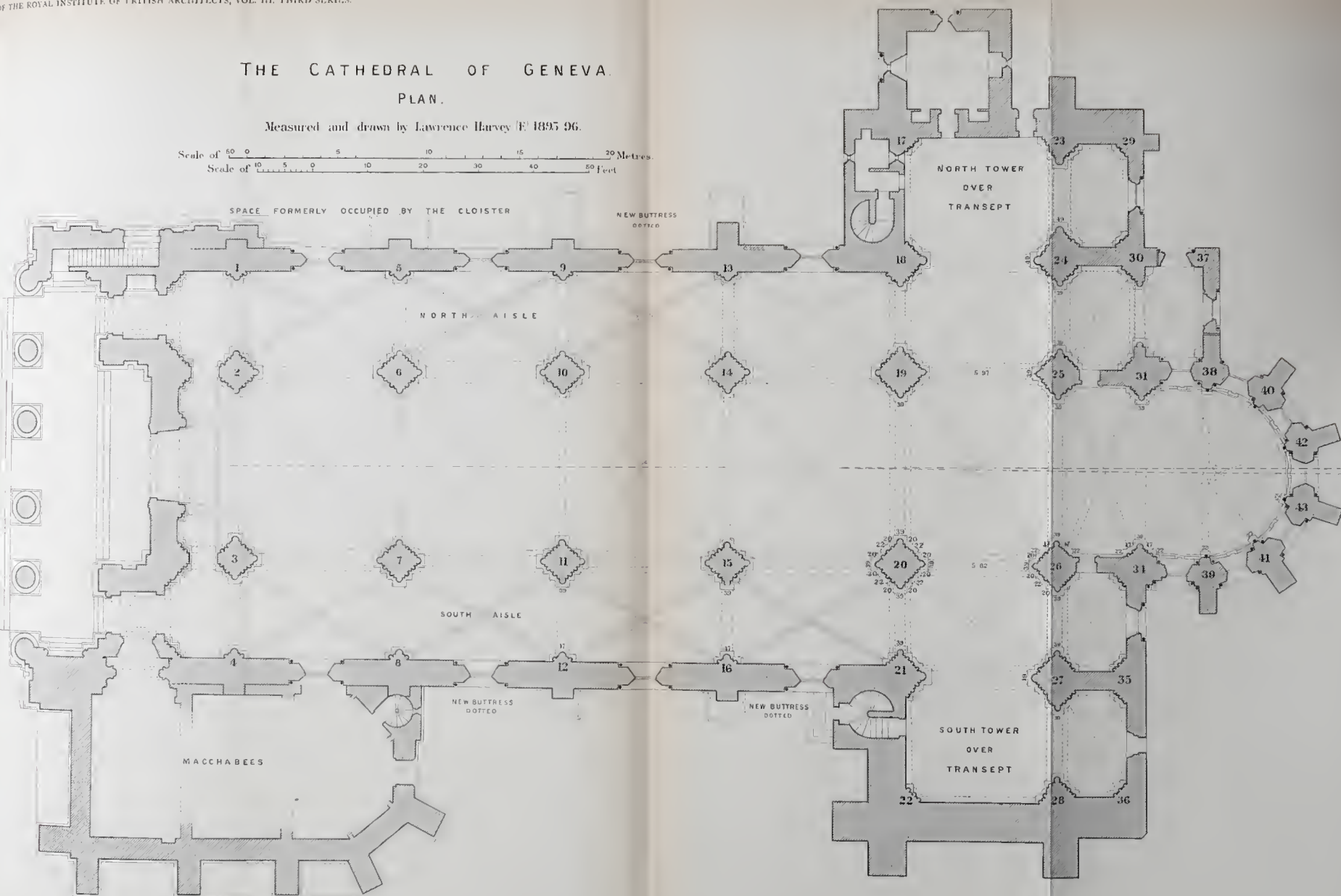
What the construction of the vaults over the aisles is I cannot say, as the vaults are covered with plaster which cannot now be removed. I am puzzled by the fact of some of the ribs, such as the one of bay 7, 8, 11, 12 of the south aisle, being twisted out of the plane, as shown in one of the photographs. This would lead to the conclusion that no centering was used in building these ribs, otherwise one cannot see how they could be built crooked. Then, Monsieur Viollier tells me that he actually removed the ribs in the vaulting of the chapels east of the south transept, and the vaulting passed on clean behind the ribs, so that the ribs of the aisles and chapels appear as mere ornaments applied on the surface of a vault similar in structure to that of a cupola. On the other hand, I can conceive that if the cells of the vaults were constructed on similar principles to those of the nave, resting on but not abutting against the ribs, the result would be in time a self-supporting vault, and the ribs might be removed. Against this hypothesis I must place the outline of the vaulted cell in its intersection with the wall. In several of the bays this outline is a parabola similar to the outline of late Tudor Gothic, and this would lead one to believe that this outline was not settled at the outset before the work was done, but was the outcome of the intersection of a certain surface of vaulting with the wall.

Another break in the management of the works is to be noticed in bay 34-39, which connects the apse with the choir. The lower part of the apse is circular, and was decorated

# THE CATHEDRAL OF GENEVA. PLAN.

Measured and drawn by Lawrence Harvey F.R.S. 1895-96.

Scale of 60 0 5 10 15 20 Metres.  
Scale of 10 5 0 10 20 30 40 50 Feet







with a round arcading supported on flat fluted pilasters; their capitals [fig. 5] were most admirably carved, and certainly all intended to be seen. The upper part of the apse is polygonal, and shafts support the ribs of the ceiling. These shafts cut roughly into the capitals of the arcading below, so that in some cases one sees emerge from under the shaft the two hands of the figure which decorated the capital. It is therefore evident that a circular apse was intended by one builder, and it was replaced by a polygonal one. It will be seen on plan that the windows of the circular apse had been begun; the remains of such a window are on the east side of the window between piers 34-39.\* The connection of the new work with the old work was of the roughest kind, but, placed where it is, it was hidden by a pier.

I should not be surprised if the lower part of the apse was begun immediately after the nave, before the new architect who erected the transept and the vaulting was called in to take command of the work. I consider this architect to have been a very great man, bold in his conceptions, knowing clearly the effect he wished to produce, and how to achieve it, brushing ruthlessly away any small questions of detail which stood in the way of obtaining his grand result. His aim was to give the church the impression of vastness for which it is remarkable. Everything has been knowingly designed to produce this illusion, and his artifices can be followed step by step.



FIG. 5.—BETWEEN PIERS 26-34, FROM ARCADING AROUND CHOIR.

He obtained an extension of the apparent length of the church

(1) by lowering the horizontal lines of the triforium and the clerestory in the apse; (2) by using small features in the apse; (3) by attenuating the proportions of certain features in the choir taken from the nave; (4) by not breaking up the nave into several successive bays right through the ceiling; (5) by a very clear and determined effort to lighten the arch which separates the apse from the choir; and (6) to the above clearly intended artifices of composition may be added the rise of the pavement from the western entrance to the choir, though this may be an effect of mere accident.

At the corner of the transept and nave (pier 19)\* the floor of the triforium drops 54 centimetres (nearly 22 inches); then again it drops one step of 30 centimetres (12 inches) at the piers 23 and 28, forming the east corners at the extremities of the transept. Thanks to this falling of the level of the floor of the triforium, the arches which open into the chapels east of the transept, and which are narrower and therefore lower than the arches of the nave, have

\* These numbers are also given on the plan [between pp. 316, 317], in which every pier is numbered, and correspond with those on the photographs presented by Pastor Weber,

and preserved in the Library. The smaller figures on the plan are dimensions given in centimetres; and they are quoted, here and there, by Mr. Harvey in his Paper.



three feet less solid stone above their apex than they would have had if the floor of the triforium had been carried round level; and therefore the proportion between the arches and the apparent load above is much more satisfactory.

At the angles between the transept and choir the floor of the triforium rises again, but not at its former level. It still remains 1 foot 6 inches below the level of the floor of the triforium round the nave. On the other hand, the floor to the arcading of the clerestory is carried on level up to piers 31 and 34, where it falls 1 foot and goes round the apse at this lower level. The dropping of these horizontal lines, the points of disconnection being hidden by piers so that the artifice shall not be obvious, necessarily augments the appearance of length of the church when seen from the nave.

A detail which has always appeared to me to help the appearance of great distance is the use of very small coloured windows in the triforium round the apse, which shine like distant stars in the dark shadow of the triforium.

In considering the piers 19, 20, 25, 26, which stand round the crossing of the transept, nave, and choir, you will see that I have carefully inscribed the dimensions of the shafts. I have done so because I have found that the shafts which accompany the main shaft of the choir-opening (25, 26) are only 17 centimetres (nearly 7 inches) thick instead of 20 centimetres (8 inches), the thickness of all the other similar shafts in the nave and transept. I venture to think that this diminution in the girth of those shafts is intentional, with the one object of augmenting the apparent distance of arches 19 and 20 and 25 and 26 which enclose the two sides of the transept; for by this means the eye is not only deceived by the diminution in thickness of the shafts, but also by the diminution in thickness of the arch overhead.

I have marked on the plan the thickness of 39 centimetres for the central shaft of the same pier (26), but I found in my notebook 38 centimetres (about 15 inches), which would also tend in the same direction of lightening the structure for purposes of optical illusion. But I am not sure whether this latter diminution was designed or accidental, as I find in the next piers, 31 and 34, the thickness 39 centimetres occurs again for the main shaft.

These latter piers, 31 and 34, offer a curious revelation of the mind of the architect. These piers are formed of the main shaft of the cross arch, on each side of which are shafts of 17 centimetres thickness to take the outer ring of the cross arch, just as in the arch 25, 26, as may be obviously seen by inspecting the bases. But in course of work the architect changed his mind: he considered that the double rings of cross arches would divide too strongly the apse and the choir, and thereby diminish the effect of distance at which he aimed. In these piers, therefore, he abandoned the shafts 22 centimetres thick specially prepared for taking the diagonal ribs, and used instead the thin 17-centimetres-thick shafts which had been intended for the second ring of the cross arch. As to the 22-centimetres-thick shafts, he put a column on them, to carry a wall rib the end of which is lost out of sight of the nave. The boldness of this setting aside of systematic architecture to obtain a general effect is the feature which has most revealed to me the architect's genius.

In a similar way the cross arches of the nave are attenuated to the same width as the diagonal ribs, so that the whole ceiling should appear as one ceiling and not as a succession of ceilings. The way this is carried out so that the cross ribs may yet fairly rest on the capitals of the shafts is to be seen in my section. The rise of the pavement, about 6 inches in 60 feet, is also shown in the section.

The effect of distance is no doubt helped by the irregular setting-out of the nave arches, which are of different widths, heights at apex and springing, heights of bases to piers, so that no line can be clearly followed; though these features, common to all Mediæval buildings, show no sign of design, but rather of the system of carrying out buildings in those times.

As a clearly intended optical precaution I may mention the lowering, by about 6 inches of the capitals of the columns of the triforium next to the piers. This seems to me to help to bind the surface of the arcading and the piers together, and also to keep the big capitals of the shafts further apart from the capitals of the columns of the triforium.

Now, as to the deviation of the centre line, the measurements reveal the method of proceeding at a glance. The arch of the south transept is simply made 6 inches less wide than the arch of the north transept. It therefore follows that the arch which opens in the choir is skewed on plan 6 inches. This makes a difference of 3 inches in the centre. Take a line at right angles with that arch as centre line of the choir and apse, you will get by calculation a deviation of 9 inches in the position of the central window of the apse. *This is exactly what it is.*

Before closing these observations, I beg leave to say a few words on the Corinthian portico put up in 1750 to replace the Mediæval front which, threatened with destruction, in its fall would have brought about the collapse of the whole building.

Many persons in Geneva go on repeating the sayings of some archæologists, that this facing of a Mediæval fane with a classic portico shows barbaroustaste, and

should be done away with. I think that if the Geneva people of to-day remove this portico, they will prove that they are real barbarians, insensible to beauty, and led away by theories.

It is true that a classic portico to front a Mediæval fane is incongruous, but in this case the evil is reduced to a minimum, as you cannot see the classic portico and the Mediæval building simultaneously. On the other hand, the portico of Saint-Pierre at Geneva is by far the finest monument of the kind in existence. There is no portico in Rome, Paris, or London the effect of which is so satisfactory from every point of view. This is due to two reasons, of which perhaps the main one is the mutual proportion of the portico and the space in front of it. The place is only approached by a side street, from which I have had taken the photograph shown [fig. 6]. The first complete view of the portico is therefore at the best angle of sight, and reveals its ceiling and depth, whereas porticos placed in large open spaces with



FIG. 6.—PORTICO OF SAINT-PIERRE, BUILT IN 1750.



streets right in front of them, as is too often the case in Paris, are diminished by their surroundings.

Next to the fortuitously happy proportion between the portico and the space in which it stands is to be put, as a main advantage, that it is enclosed by walls at both ends. This turns the portico into a vast and comfortable open hall, protected on both sides from rain and wind, and gives to its angles an appearance of absolute stability. One must be blind, when looking at this portico, and considering the admirable way in which it is connected with the church, as well as the grandeur of the steps that rise up to it, not to see that we have here the work of a great genius. The name of the author is Count Alfieri, Architect to the King of Piedmont, who happened to be in Geneva at the time when the reconstruction of the façade was being considered. He took three months in the preparation of his design, and, like a true artist, would accept no payment, the pleasure of doing the work being for him ample reward.

### DISCUSSION OF THE FOREGOING PAPERS.

Mr. ASTON WEBB, F.S.A., *Vice-President*, in the Chair.

MR. WILLIAM WHITE [F.], F.S.A., opened the discussion by proposing a hearty vote of thanks to the two gentlemen who had treated the subject before them with spirit, interest, and apparent accuracy. The plan and section were most beautiful and simple. The system of the square setting-out was adopted, apparently, in all countries at about the period of Saint-Pierre. Many English churches were set out upon the square prior to the pointed work; but with the square there were considerable elements of the equilateral triangle, and in the case of Saint-Pierre the proportions of the aisles, as shown on the lines of vaulting, were exactly two equilateral triangles on end. The plan of the transepts also showed a further modification of the same proportion. As regarded the shallow buttresses, he was not quite convinced that the buttresses were added because a vaulted roof was not originally proposed; in that age buttresses were flat, whether they had vaulting or not, and in many cases the fall of the work was the result. He should not be at all surprised if the heavy buttresses were subsequently put up in order to support that vaulting which had been generally found to fail. At that date, instead of deep buttresses, where such buttresses were needed, they commonly used flying-buttresses. The effect of the exaggerated perspective had been very well brought out in the dropping of the stringcourses towards the eastern end, not at all in a regular way, nor altogether, but in a gradual way, and not in the form of a great contrast. The rising of the floor which contributed to that effect was often produced in consequence of the levels of the ground outside, whether it was an inclination upwards or downwards. That had been the case in some English churches. For instance, in that interesting church at Adisham, of which he had given an account some years ago, there was Medieval paving, quite undisturbed in large portions, showing the descent of the nave,

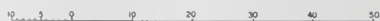
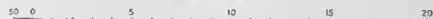
and with a very fine effect. That was evidently suggested by the fall of the ground, which was about 7 or 8 feet in the length of the church, as there was a descent of some ten or twelve steps into the church at the west doorway, besides those other reductions in the height. So at Saint-Pierre, evidently, advantage had been taken of the rise of the ground in that respect; as the longitudinal section showed, the ground was considerably lower at the west end than at the east. Then the inequality of the pillars and the arches was a feature very common in Medieval work. In very many cases, he thought, it was introduced simply for the sake of avoiding the absolute uniformity of the carefully set-out geometrical proportions—that absolute uniformity giving to the eye a power of measurement of the whole outline—which those little deviations made practically impossible.

PROFESSOR AITCHISON [F.], A.R.A., did not quite agree with M. Viollier and Mr. Harvey as to what was humorously called "Restoration." Of course all architects had to deplore that there was no original architecture now. If they had such an architecture, they would naturally restore in the style of the day, as was done in the case of the portico and in all periods when architecture flourished. But, for all that, it must be obvious that these "restorations" were generally of the most disastrous character. Where pieces of moulding or of any plain architectural part existed, the intervening decayed part could be repaired or restored. But if a whole piece of ornamental work had gone, how was it possible to restore it? The architect endeavoured to put himself into the frame of mind of the people of that time. But that was absolutely impossible, whether they were barbarous, semi-civilised, or skilful and refined. If the lost part was of the most refined art, then it was beyond what could be done in the present day; if it was barbarous, it was less than could be done by themselves; but in any case the invention be-

# THE CATHEDRAL OF GENEVA. LONGITUDINAL SECTION

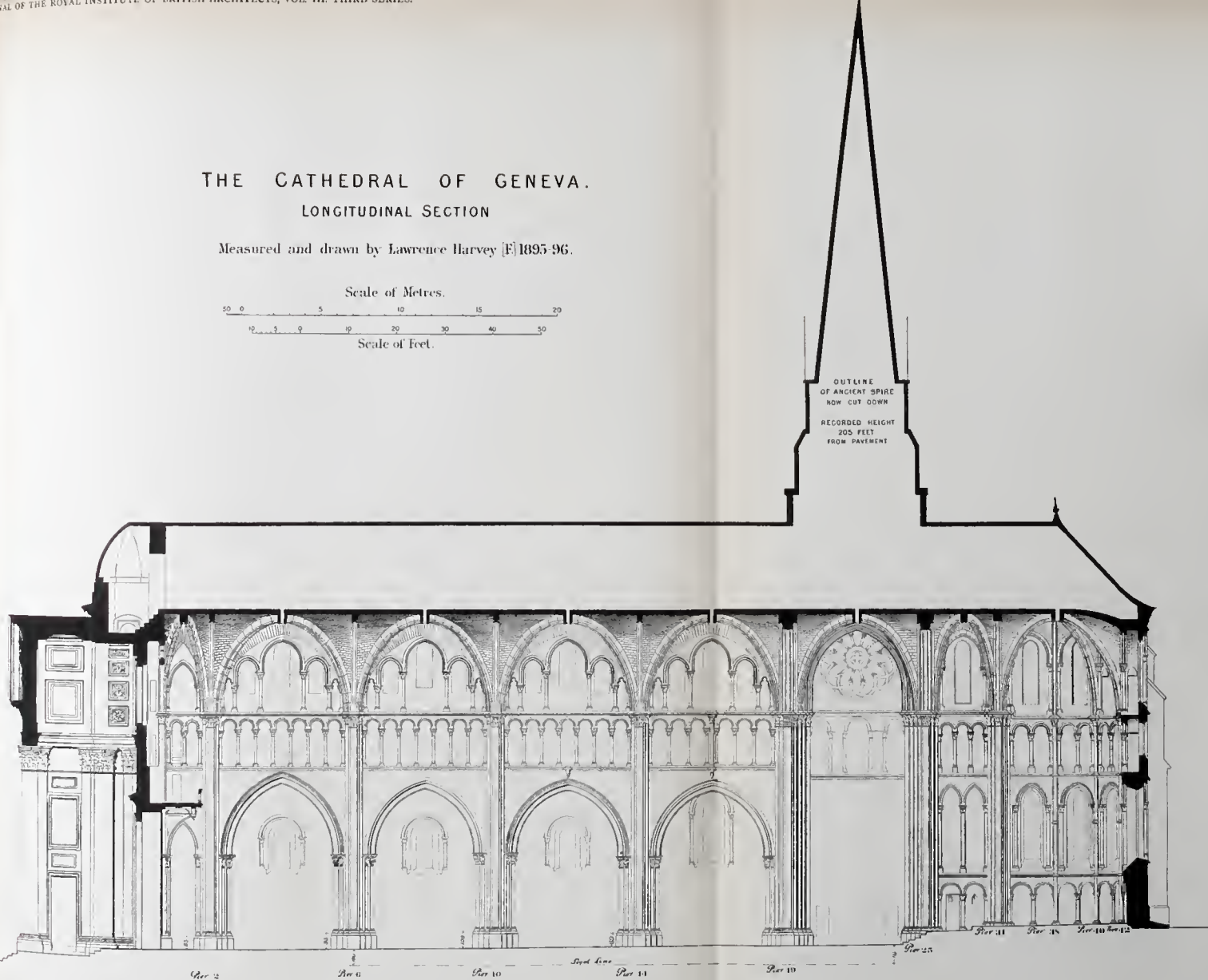
Measured and drawn by Lawrence Harvey [E] 1895-96.

Scale of Metres.



Scale of Feet.

OUTLINE  
OF ANCIENT SPIRE  
NOW CUT DOWN  
RECORDED HEIGHT  
205 FEET  
FROM PAVEMENT







longed to the time it was done. Surely, then, they should give such a character to the parts that they spoke of restoring as would mark most distinctly that it belonged to a different period—that it was not an attempt to imitate that which they could not possibly imitate, and which would effectually destroy the archæological value of any building. They knew that throughout Europe these impudent forgeries had been carried on to a very great extent, and it was one of the most disastrous things possible, because the more the nineteenth-century sculptor, carver, or architect endeavoured to imitate, the more he prevented his work being of any æsthetic or historic use. The general appearance of the thing was really of comparatively small importance; besides, the sculptor must be a bungler who could not make his work give the light and shade wanted. That a cathedral which did not require pulling down should not be made into a place that was useful for the purpose of worship was absurd; but that they should give the new sculpture the character of the time that it belonged to—the present time—appeared to him to be one of the most clearly marked duties of an architect. To pretend that he was going to do Romanesque work or Gothic work was quite wrong in every sense. It would afford to future antiquaries no idea either of the skill of to-day, or of the skill of the time which it was supposed to represent, and he hoped that that view, which he presumed everybody took, would be conveyed to M. Viollier and Mr. Harvey, because he thought that the Institute should, as far as it could, put a stop to forgery. In many of the Romanesque churches, where a large piece of carving was utterly gone, the gentleman who carved comic umbrella-heads and pipes put in his own comic inventions, which were supposed to represent the thought, the taste, and the expression of people of the eighth, or the tenth, or of some other century. But, apart from that, they were, of course, extremely obliged to M. Viollier and Mr. Harvey for the trouble they had taken, and for the information they had given of the history and proportions of this interesting cathedral.

COLONEL PRENDERGAST [H.A.] was extremely obliged to Mr. Harvey for having gone into details in the way he had. People apparently did not realise that the Institute was a scientific society, which had important duties towards the nation in regard to scientific architecture. Mr. Harvey had taken very great trouble to explain to them the principles upon which he believed the Cathedral of Geneva was built, and they ought to thank him most cordially for that. There were some extremely interesting points brought to their notice which, under ordinary circumstances, most of them would not, he thought, have found out for themselves. Half a dozen years ago—he did not know what its present condition might be—the building was in a deplorable state. Its situation

was the finest possible, on high ground in the old town, over the Lake of Geneva. But it was lost to all knowledge; he doubted if any tourist ever saw it. If one toiled up the hill to the cathedral, one found it surrounded with buildings of the most ignoble character. He himself had been so disgusted at its then condition that he confessed he took no trouble to investigate deeply what was before him. As to the charge brought against those conducting the restoration, he did not know whether it was good or bad. All he could say was, that there was not evidence that anything had been done which should not have been done. No one present, he thought, was more conservative on those subjects than he was, and yet he cordially thanked M. Viollier for having so clearly pointed out that the Genevese had made up their minds that they would be no parties to the destruction of what he ventured to say many people in England would have destroyed—the portico, which was a most interesting eighteenth-century work—notwithstanding that it deprived a distinguished church of one of its bays. And yet, in the face of all that, the Genevese were possessed of such conservative feeling that they decided not to destroy it. They deserved great credit for that, and he for one was not prepared to ask the Royal Institute of British Architects to censure those who were undertaking the work on the grounds put forward, without any kind of proof, by the Society for the Protection of Ancient Buildings. There was a limit to that sort of protest. They must recollect that Geneva was the city of Calvin [see p. 313, fig. 2], who destroyed everything he possibly could in every possible way. Yet see what a spirit the Genevese were showing: it was a spirit greatly to their credit.

THE HON. SECRETARY understood from Professor Aitchison's remarks that in restoration they had no business to attempt to follow out the style in which the building was originally erected, but that they ought to restore it in the style of architecture prevailing at their own time. If that was what the Professor meant, it seemed to him they would have to restore in the style of the Forth Bridge or the modern Queen Anne when adding to a Gothic cathedral.

PROFESSOR AITCHISON replied that he was speaking about the carvings and sculpture, not at all of the general structure. At the same time he was not sure that it would not be a very excellent thing to restore it in the style of the Forth Bridge or the modern Queen Anne, because that would show exactly the date at which it was built, and the relative civilisation of the present time. With regard to the portico, he should like to say that it was built by Alfieri, Count of Sostegno, originally a barrister, who was, he supposed, one of the last architects who were such by nature. He took a fancy to architecture, and became a great architect in Piedmont. It was



by him that Alfieri, the poet, who was so fond of England and the English, was brought up.

MR. THOMAS BLASHILL [*F.*] said that some twenty-five years ago he spent a little while in Geneva, when the church was in its worst state, which might be the reason why, although he paid some attention to it, he certainly failed to see the beauties so clearly described that evening. Indeed, one could not possibly see them without the photographs which had been taken with such great care and patience. He had been very much impressed with the great beauty of the capitals, which reminded him of those at the Abbey Church of Vézelay. Unless his recollection misled him, they were so much alike that they might have been done by the same hand. He particularly referred to those containing figures and groups, which had a distinct character of their own, in capitals. The foliage capitals were remarkably beautiful and vigorous and interesting; but the figure subjects interested him a great deal more, because they represented a kind of subject which had been so little used in modern architecture. He quite agreed with Professor Aitchison, that to attempt to invent or imagine new sculptures to replace the old, whether the sculptor intended it or not, would have quite a comic effect. The value they possessed grew out of the meaning of the artist in carving them; and when one arrived at that meaning, as one generally could by careful examination, one gained very valuable ideas as to the views of the sculptor on events of his time. Something had been said about the alteration of the level of the church. Of course the slopes, or the steps, or whatever they might be, generally arose from some alteration of the level of the ground. But he should hardly attach any value to that as a means of gaining effect. He had always been much more struck, when descending into a church, that such an idea should so seldom be used in modern times. The effect of going down into a church by a flight of steps, and then, perhaps, at each of three or four bays, going down three or four steps more—he could name two or three churches which afforded examples of this—was grand in the extreme. After descending to the place where the tower was, there was probably a considerable flight of steps to the chancel, and that was one of the grandest means of getting effect in a church that he knew of. He thought they should say very little about what was proposed to be done in Geneva. It seemed to him from the Papers that those responsible knew their business exceedingly well, and he should be slow to find any fault with them.

MR. WILLIAM WHITE, referring to the restoration question, said that sufficient distinction was never drawn between the strictly architectural features of construction and the strictly artistic features of ornament. With regard to sculptures and carvings, he considered it iniquitous to touch

them. They could not be reproduced in any way. But that was not applicable to the restoration of details such as stringcourses, which might be lost in a short time unless repaired in some way.

THE CHAIRMAN, in putting to the Meeting the vote of thanks which had been moved to the authors of the Papers, observed that he should like also to include Pastor Weber in that vote for the exceptionally complete collection of photographs he had kindly presented to the Institute. A photographer in Geneva had been first asked to make them, but Pastor Weber had very kindly undertaken the task entirely for the love of it. The thanks of the Institute were especially due to him, and Mr. Harvey would be very pleased to convey their acknowledgments. He thought he might emphasise what Colonel Prendergast had said as to the value of such Papers as those they had heard, which showed original research into the principles of the design. It was not mere information acquired from books, but was evidently obtained on the building itself, and was therefore of especial value. The way in which the inclination of the apse had been arrived at was quite new to him (the speaker). He did not know whether that had ever been noticed before; but it was a most interesting fact that the inclination arose owing to the arch on the north side of the transept being of less span than that on the south. With regard to the devices for increasing the perspective and apparent length of the church, he could not help thinking that they, as architects, ought to attach a great deal more importance than they did to refinements of that sort in their designs, more especially in the interior of their buildings. He remembered once measuring a large, deeply recessed porch at Bamberg which appeared to have a very great depth; but when he came to measure it he found, what he might never have noticed, that the columns carrying the different portions of the arch diminished in an equal gradation from the outer shaft to the inner one, the outer being something like 8 inches, and the innermost column, near the door, about  $4\frac{1}{2}$  inches. With regard to the rising floor of the church, he remembered that Ewan Christian, who was always very strong upon that point, found a large number of old churches in which the nave floor rose considerably towards the east end, with very great advantage to the perspective of the church. In Southwell Minster this was strongly marked, and evidently done for the purpose. The Institute, he was sure, would all agree with the retention of the west porch, which Colonel Prendergast had mentioned, and would be most unwilling in any way to pronounce an opinion upon so difficult a work as M. Viollier had in hand without having had the equal advantage of careful and thorough examination of the building on the spot. It was, he thought impossible to apply general principles in cases each of which should be dealt with by itself



9, CONDUIT STREET, LONDON, W., 19th March 1896.

## CHRONICLE.

M. CHARLES GARNIER,

*Hon. Corr. M., Royal Gold Medallist.*

The promotion of the distinguished architect who presides over the Société Centrale des Architectes Français to the grade of Grand-Officier de la Légion d'Honneur has been followed by incidents of unusual interest to his professional brethren. Early in January the Council of the Institute caused a letter [see p. 223] to be addressed to Monsieur Garnier congratulating him on his then recent nomination—a letter which did not reach his hands until the first week of the current month, when he returned to Paris from his winter retreat at Bordighera; and hence the tardiness of his reply, which he explains, with a grace all his own, as follows:—

*Paris, le 8 mars 1896.*

*A Messieurs les Secrétaires de l'Institut Royal des Architectes Britanniques.*

MESSIEURS ET CHERS CONFRÈRES,—C'est seulement en revenant ces jours-ci à Paris que je trouve la lettre que vous avez bien voulu m'adresser au nom de votre Institut. Je veux espérer que, n'en recevant pas de réponse, vous avez pensé que vos si flatteuses félicitations ne m'étaient pas parvenues. Il en a été ainsi; car, sans cela, j'eusse été impardonnable d'avoir négligé de vous envoyer mes plus sincères remerciements.

Vous savez, mes chers confrères, combien je tiens à honneur de faire partie de l'Institut Royal, institut qui, le premier, m'a ouvert ses portes; c'est un souvenir que je ne saurais oublier. Puis, plus tard, il m'a décerné la grande médaille d'or, et cette distinction insigne a été pour moi la consécration de la bienveillance que les architectes anglais voulaient bien me témoigner, et maintenant encore vous me prouvez à nouveau votre sympathie en m'envoyant vos confraternels compliments. Vous n'avez donc pu croire que j'étais indifférent et que mon silence était ingratitude.

Recevez alors pour tous les membres de votre Institut et pour vous-mêmes, mes chers confrères, l'assurance entière de ma vive reconnaissance.

CHARLES GARNIER.

From Bordighera Monsieur Garnier was bidden to Nice, on the 22nd ult., by the Association Régionale des Architectes du Sud-Est, there to partake of a *déjeuner*, at which the Presidents of the Tribunal Civil and the Mayor of Nice, with a representative of the Prefect of the Alpes-Maritimes and other functionaries, besides the architects of the locality, assisted.

Meanwhile the Council of the Société Centrale had invited their President to a banquet in order to celebrate, they said, the event "unique jusqu'ici" "dans l'architecture"—that of the nomination of an architect to the grade of Grand-Officier of the National Order of France. It was also decided to offer him the further homage of a medal bearing on the face his portrait, to be executed by Monsieur Chaplain, and on the reverse an inscription stating that it was presented by the Société Centrale and by Societies in correspondence with the Paris Body.

That the Institute should join in such a manifestation of rejoicing and goodwill was but natural, and that its name should appear in the list of those who have contributed to what may be termed the Garnier Testimonial must be gratifying to all its members. That list, moreover, includes all the British Corresponding Members of the French Society—namely, Professor Aitchison, Messrs. F. C. Penrose, R. Phené Spiers, and William H. White; and as an exception, in his capacity of Correspondant de l'Institut de France, Mr. Alfred Waterhouse. According to the six successive announcements made in *L'Architecture*, some 300 members and ten or more Societies had, up to the 12th inst., subscribed to the Testimonial.

The banquet, which was held on the 7th inst. in the Galerie des Champs-Élysées, a new building with a façade towards the Rue de Ponthieu of exceptional excellence, was attended by 150 architects and others belonging to the world of Art. Monsieur Garnier occupied the Chair, with Monsieur Roujon, Directeur des Beaux-Arts et des Bâtiments Civils, on his right, and Monsieur Larroumet, a former Directeur, on his left, supported on either side by Members of the Institut de France. Immediately opposite the Chair sat Monsieur Achille Hermant, Vice-President of the Société Centrale, supported right and left by other members of the Council. The *menu* was not only excellent in a practical sense, but it had the further advantage of being artistically recorded by Monsieur Louis Bonnier. The health of President Garnier was proposed, in the name of the Société Centrale, by Vice-President Hermant, and a drawing of the Subscription Medal was submitted by Vice-President Corroyer. The Director of the Beaux-Arts then eulogised the career of Charles Garnier, from the time the latter, as a "Grand Prix," submitted his "Restoration of the Temple of Ægina" until his accession to the Vice-Presidentship of the Conseil des Bâtiments Civils, comparing his natural gifts with those of Alberti. Monsieur Roujon then invested the President with the badge of Grand-Officier, and Monsieur Garnier returned thanks in his usual felicitous and familiar manner, permitting himself the assertion that Genius is a quality one ascribes to the dead in order to annoy the living. Two speeches followed: from Monsieur Jacques Hermant, in the name of the Société des Architectes



Diplômes, and from Monsieur Newnham, of Lille, Vice-President of the Société Régionale des Architectes du Nord, in the name of the Provincial Societies.

The delegate of the Royal Institute of British Architects, followed, to the best of his ability, in French. Having expressed the pleasure it gave him to officially represent the Institute at such a *Fête de Famille*, Mr. White said that as early as the 6th January the Council of the Institute had recorded their congratulations to two distinguished men great in Architecture and the Arts: the one was President of the Royal Academy of Arts of London, who had been raised by Queen Victoria to the Peerage of the United Kingdom; the other was President of the Société Centrale, who had been nominated by the Republic Grand-Officier de la Légion d'Honneur. Unhappily, Lord Leighton had since succumbed to an incurable malady, but happily Charles Garnier was still with them, at the head of the architects of his country, worthy of the honour he had received - an honour which, at the same time, honoured the architects of every country. Mr. White in conclusion, on behalf of President Penrose and the architects of the British Empire, offered President Garnier their most cordial and sincere felicitations. At the termination of the speech, which was received with every mark of favour, the name of Mr. Penrose having been loudly applauded, Monsieur Garnier left the Chair to personally thank and shake hands with the speaker; and the Institute was toasted amid a spontaneous burst of cheering. One or two other speeches followed, and the company retired to attend a ball given the same evening, in the same Gallery, in aid of the Société Confraternelle de Secours, at which more than a thousand persons assembled. The ball was opened by President Garnier and Madame A. Vaudoyer, a name which for more than a hundred years has been linked with the history of French architecture; and the dancing, which never flagged, terminated with a cotillon in the small hours of the morning.

#### Mr. Penrose and the French Architects.

By a letter dated 3rd inst., the President of the Société Centrale des Architectes Français has informed Mr. Penrose that the Council of the Society having nominated him a Corresponding Member, he had been unanimously elected by the General Assembly on the 27th ult. The President of the Institute, when acknowledging the compliment, forwarded to the Society some of his recent Papers on details of the Acropolis at Athens, the Orientation of Temples, &c., and expressed the gratification he felt on being thus brought in connection with the French Society. An account of Mr. Penrose's career, with especial reference to his study of the optical refinements of the Greek architects, is given in *La Construction Moderne* (7th inst.), which has also published, in recent

numbers, a description, not yet finished, of Leighton's house in Holland Park Road, with several illustrations.

#### The Cathedral of Geneva.

The photographs of Saint-Pierre-ès-Liens, presented by Pastor Weber [p. 312], form a collection of extreme value and rarity, every detail worth noting in the architecture of this venerable structure being truthfully depicted. They number altogether forty-four of quarto and thirty of folio size. Nearly all the piers are shown, and numbered to correspond with those marked on the plan of the Cathedral [pp. 316, 317]. In this connection should be mentioned the beautifully illustrated work, in three parts, *Saint-Pierre: Ancienne Cathédrale de Genève*, published by the Association pour la Restauration de Saint-Pierre, presented last year by Monsieur Viollier [*Hon. Corr. M.*]. It forms a complete record of all that is known of the Cathedral, its past restorations, and the scheme of restoration now being carried out under the direction of M. Viollier. The illustrations, rendered by various processes, are of marked excellence, and include large coloured plans and sections.

#### Additions to the Library.

Mr. W. H. Thorp [*F.*], the architect of the new buildings of the Medical Department, Yorkshire College, Leeds, presents a handsomely illustrated quarto, comprising a history of the School, with a description of the several departments, plan of the buildings, views of the exterior, and of the museum, theatre, library, and various class-rooms. Views of the Leeds General Infirmary, where the clinical instruction of students is conducted, and other departments of the Yorkshire College are also included.

A new edition, revised throughout and enlarged, of *Griffin's Electrical Engineers' Price-book*, edited by H. J. Dowsing, has been received from the publishers, Messrs. Charles Griffin & Co.

The *Engineering Magazine* for March contains the first instalment of a Paper by R. W. Gibson on the Architecture of Modern Bank Buildings, this part dealing particularly with plans and interior arrangements.

## NOTES, QUERIES, AND REPLIES.

### MR. PHENÈ SPIERS'S PAPER [p. 233].

#### Saint-Front of Périgueux [p. 285].

From R. PHENÈ SPIERS [*F.*], F.S.A.—

I am obliged to Professor Baldwin Brown for his references to Schnaase's *History of the Arts of Form* and Dehio & Bezold's *Ecclesiastical Architecture of the West*. I am only acquainted with the plates of the domed churches in the latter work. Since reading my Paper, I have seen an article by Mr. J. A. Brutail in the *Bulletin Monu-*

mental of last year, in answer to one by Mr. Anthyme St. Paul. Mr. Brutail arrives at the same conclusion as myself, and on somewhat the same grounds, viz. he recognizes "La vieille église" as eleventh-century work. He carries the date of the completion of the five-domed church to 1173, that being the year in which the bodies of the saint and bishops were re-interred in the new church.

I can well understand that exception should be taken to my statement that St. Mark's, in the twelfth century, was one of the wonders of Europe; but that it was then simply a skeleton, as Professor Brown suggests, I cannot agree. It must be remembered that he judges St. Mark's by what it subsequently became in succeeding centuries; but it by no means follows that, at the commencement of the twelfth century, it was not regarded as a remarkable monument. Strip off all the mosaics and marble slabs from the interior, stucco the walls and limewhite them, and by the beauty of its plan and the majesty and proportions of its domed interior, it would, certainly in Venice, where they were not accustomed to domes, be looked upon as possessing new and grand features. It was not contemplated at first to encase the exterior with marble slabs, or to enrich the front with innumerable columns and capitals, mainly brought from the East in the thirteenth century. The exterior, therefore, was built in fine brickwork, with blind arcades, niches, and stringcourses; and the five great arches of its main front were built with those deep brick voussoirs which, to the present day, form the chief decoration of the churches in Constantinople, such as those of the Monastery of the Chora and of the Theotocos. I contributed to *The Builder* in January 1893 a restoration of the three fronts of St. Mark's, Venice, as it appeared at the end of the eleventh century, which will show that it was, in its design, not inferior to those just mentioned.

I suggested in my Paper that the master-mason of Saint-Front may have heard of St. Mark's through some of the Venetian merchants settled in Périgord; and if he had accompanied some of them to Venice to see this new domed structure he would recognise at once the greater beauty, I think, of the Greek-cross plan. Further, he might have seen his way to improving the design if it were reproduced in Périgueux. The fine ashlar masonry of his own country would certainly eclipse the brickwork of St. Mark. By the employment of pointed arches to which he had been accustomed, as a much stronger form of arch, he might hope to erect a structure which would last much longer. He had his own way of building pendentives, so that all he had to do was to note the scheme, measure the units—viz. the width and height of the main arches carrying the pendentives and domes, and the square piers supporting them—and by building domes of larger size and all of the

same dimensions, and enclosing the cupolas with stone lanterns of original design, he might feel that he had an opportunity of creating a fine architectural monument all built in fine ashlar masonry, which by its fine proportions and the simplicity of its decoration would hold its own in comparison with St. Mark's. I may here note that the various descriptions given of the identity of the two buildings in dimensions are misleading. It is just possible that the length and width of the two structures may be the same if, as is suggested, French feet be substituted for Italian feet. But that proves nothing, because the domes of Saint-Front are all larger than those of St. Mark's, and are all of the same size; whereas in St. Mark's the eastern dome and those over the transepts are smaller, and the piers between are of less dimensions. If there be that exactness of dimension (which I doubt), it must have been purely accidental. As to the influence of St. Mark's on the plan of Saint-Front, it becomes necessary to compare the traditional plan of the principal churches in Aquitaine, such as Fontèvrault, Angoulême, Solignac, and Souillac, with Saint-Front, and then Saint-Front with St. Mark's; and I think it will be found that the Greek-cross plan and the pierced openings in the piers are quite foreign to the traditional plan, and are copies of St. Mark's. This explanation will show that, until I have had an opportunity of studying Messrs. Dehio & Bezold's theories, I am not inclined to agree with them as to the intended extension of the west arm of the cross; and the improbability is increased by the fact that even to the fifteenth century the paving of the church under the west dome was raised three feet above that of the transept, in order to preserve the substructures of the old church, which probably contained the bodies of saints.

I only referred to the statement made by the later chronicler of Charlemagne to prove how exceptional was the employment of Byzantine workmen in Germany; the monk of St. Gall, who was nearly contemporaneous with Charlemagne, is more likely to be correct. This increases the value of my argument.

I need scarcely say that I appreciate highly the testimony borne by Professor Baldwin Brown to the interest and value of my Paper.

#### The Domes of Aquitaine [p. 286].

From R. PHENÉ SPIERS [F.], F.S.A.—

Mr. Quilter, after pointing out that the main object of my Paper was "to disprove the statement made by De Verneilh as to the date of the "five-domed church of Saint-Front at Périgueux," continues in the same paragraph: "This was so fully set out by Edmund Sharpe in his lecture "that I need do no more than refer to the very "clear epitome of it in the first chapter of the "*Charente Memorial*." Mr. Quilter here suggests



that I have plagiarised Sharpe without giving him the credit, but such is entirely at variance with the facts. The idea never occurred to Sharpe of disproving De Verneilh's dates; on the contrary, he fully and unreservedly accepted them. On page 11 he says: "There does not seem to be a difference of more than ten or fifteen years between them, St. Mark's preceding Saint-Front by about that interval. St. Mark's was founded in 977 by "Orseolo," &c. The later date of the five-domed church of St. Mark's, viz. 1063, which formed my starting point, was not proved conclusively until 1889, by Professor Cataneo, after the restoration of the church. It was not known in Sharpe's lifetime.

Mr. Quilter may claim all the credit he desires for his statement of "a dome on a dome." Sharpe did not deem it necessary to give so obvious and palpable a description though lecturing to students, any more than he would have thought it worth while telling them that twice one make two.

In the next paragraph Mr. Quilter proceeds to give his version of the evolution of the pendentive. "The earliest example," he says, "of an attempt to construct a dome over this square void" [referring to the crossing] "is seen at Cellefrouin, Puyperoux, Montbrun, and Roulet." "The next step . . . is shown in its simplest form in the illustration Mr. Spiers has given of St. Stephen's at Périgueux, which he describes as a pendentive formed on the extrados" [intrados, if you please; see drawings Nos. 9 and 21] "of the arches." But Mr. Quilter is unfortunate in his history, which reads backwards, like "Alice through the looking-glass." Cellefrouin dates from 1050, but the other churches are later. Roulet being late twelfth-century, whereas the west dome of St. Stephen's dates from 1014-1019, and Saint-Astier, nine miles off, with a plan exactly similar, and presumably, therefore, originally covered with similar domes, dates from 1002-1013.

Sharpe (page 25) says, speaking of Cellefrouin, that "it is interesting as showing what was the stock upon which the Byzantine element" [meaning the domes] "derived from Périgueux was grafted."

Later on, in the same paragraph, Mr. Quilter gives us the elementary information that in the true pendentive the arches become simply perforations in the surface of a dome, the diameter of which is equal to the diagonal of the square void. But this applies only to circular arches, of which there is one solitary example in Aquitaine, viz. at Fléac. My Paper dealt with the pendentive carried on pointed arches, which are not intersections—or perforations, as Mr. Quilter calls them—of a dome, the diameter of which is equal to the diagonal of the square void. In the next paragraph he informs us that "the double curvature of the pendentive, to which Mr. Spiers also

"alludes, arises simply from the necessity of raising the upper part of the lower dome in order to obviate the apparent weakness of the base of the upper dome coming so close to the apex of the arched perforations in the lower dome." Mr. Quilter does not seem to have understood the illustration, or my description on page 252, which I had hoped was perfectly clear. The point c on fig. 16 [p. 253] represents the horizontal level of the soffit of the keystone of the arch; about 3 feet below this point c the arm of the pendentive has already commenced its reflex movement; *without that reflex or return curve the intersection would not have given a pointed arch.* But if Mr. Quilter will not accept my statement, perhaps he may be disposed to believe that of the greatest authority on vaults and domes at the present day, viz. M. Auguste Choisy, author of the well-known works on Roman and Byzantine architecture. I sent over a proof of my Diagram No. 16, with a description, to him, and also propounded the six important differences I had noted between the French and the Byzantine domes. With respect to the latter, M. Choisy preferred to wait till he had seen my arguments before answering; of the diagram he says, "Puisque en réalité les arcs directeurs du pendentif sont des ogives, leur sommet est plus élevé, et un relèvement correspondant doit se manifester dans la partie supérieure de la surface de révolution qui constitue le pendentif: de là le profil diagonal en courbe retroussée que vous avez si justement observé et si bien expliqué." The extent to which the dome was raised above the voussoirs of the arch varies; at Saint-Front, where the upper dome is set back 3 feet (so that there was no weight to carry, apparent or otherwise), there are two or three courses above the voussoirs. At Saint-Emilion and Saint-Amand-de-Coly, where the upper dome rises immediately above the string, the voussoirs touch the string, so that Mr. Quilter's theory is not borne out by the facts.

In answer to Mr. Quilter's last paragraph, in which he says "that the construction of the domes and pendentives was worked out step by step by the builders of La Charente, rather than that they were copies of any foreign model," if by foreign he means Byzantine, that was what I attempted in my Paper to prove; if he means Périgordian, then I would ask him to refer to the very clear epitome of Edmund Sharpe's lecture in the *Charente Memorial*, and particularly to the paragraph on page 9. "In those churches" [speaking of those in La Charente] "the dominant feature, the dome, which almost invariably surmounts the intersection of the arms of the cross, was imported from the neighbouring Périgord, but it does not appear in the Angoumois" [the original title of La Charente] "until the commencement of the twelfth century."



## MINUTES. X.

At the Tenth General Meeting (Ordinary) of the Session, held Monday, 16th March 1896, at 8 p.m., Mr. Aston Webb, F.S.A., *Vice-President*, in the chair, with 19 Fellows (including 8 members of the Council), 17 Associates, 1 Hon. Associate, and several visitors, the Minutes of the Meeting held 2nd March 1896 [p. 297] were taken as read and signed as correct.

The decease was announced of James Abernethy, F.R.S., M.Inst.C.E., *Hon. Associate*.

The following Associates, attending for the first time since their election, were formally admitted and signed the Register, namely: Tom Turner and Walter Brand (Ipswich).

Papers by MM. Louis Viollier [*Hon. Corr. M.*] and Lawrence Harvey [F.], entitled SAINT-PIERRE-ÈS-LIENS: THE ANCIENT CATHEDRAL OF GENEVA, having been read, in the absence of the authors, by the Secretary, the same were discussed. Cordial votes of thanks to the authors and to Pastor Weber for his generous donation of photographs to the Library [p. 312] were passed by acclamation.

The proceedings then terminated, and the Meeting separated at 9.30 p.m.

## PROCEEDINGS OF ALLIED SOCIETIES.

### THE MANCHESTER SOCIETY.

#### Practical Lessons derived from the Modern Use of Terra-cotta. By J. Miller Carr.

Read 3rd March 1896.

As the title of this Paper confines our attention to the modern use of the material, it will not be needful to enquire as to its ancient history. Suffice it to say that there are specimens of terra-cotta slabs in the British Museum which were used by the Greeks for external decoration of buildings in the sixth century B.C.; and you are doubtless familiar with its extensive and successful use in North Italy in the early part of the Christian era. We have to do on the present occasion with its use by our own generation, and chiefly in our own country. In considering carefully the modern use of the material, with a view to derive from that use the practical lessons it is capable of teaching, it will be well, first of all, to lay down a few principles which should influence and direct its true and proper use, and then to give a few simple definitions as to the true characteristics of this and other materials used for similar purposes in architectural structures. It is hoped that these principles and definitions, even if not accepted by all present, may yet be of use in clearly indicating the points to which exception may be taken.

PRINCIPLES.—I hope I may assume with safety that every person present will agree at once with my first principle, viz. (a) that *imitations of any material in any other and different material are necessarily bad*. Of course all deception, fraud, or falsehood must be bad, just to the extent that it is falsehood, deception, or fraud. I think Mr. Ruskin deserves well of this generation for laying his axe, with so much vigour and effect, to the root of this baleful creeper, which half a century ago was sapping the life of many a fair tree; and though its clinging tendrils still enumber many a branch, yet I think we may say with truth that the life is practically gone out of it. I suppose if you had asked a London firm of decorators twenty years ago what they could do to help you to decorate a high-class mansion, they would have

been likely to boast that they could grain the woodwork to such perfection that it should rival the real wood of which it was to be an imitation; but to-day they would not dream of making any such proposition.

I wish I could advance my second principle with the same confidence in its universal acceptance. It is that (b) *uniformity of colour is bad in any material which by its nature admits of variety*. Dead uniformity, evidently the guiding principle in the erection of those miles on miles of dismal, mournful London streets such as Gower Street, is certainly, one is thankful to say, not now in the ascendant, but it is still to be found too often in architects' specifications. A few weeks ago I happened to mention to a leading London architect that we still got specifications of uniformity of colour for terra-cotta; to which he replied, "You surely do not mean that any architect of importance and 'worthy of the name now specifies uniformity of colour in 'terra-cotta.'" I excused the profession by saying I supposed it must have been copied from old specifications. Is it not a fact that building materials have an increasing value from a decorative point of view exactly in proportion to the richness and variety of their colour? Craigleith stone is as hard as, and more durable than, Sicilian marble, but not of its decorative value, because of its lack of the veins and colour; so also oak, teak, walnut, and mahogany are more valuable than deal by reason of the richness and colour of their several figures.

Speaking of colour in connection with terra-cotta, I must say that ten years ago we were in the full tide of uniformity in architects' specifications; and about that time, whilst making some improvements in the structure of their "body" for the delicate pinkish tone of colour which has been used a good deal in London, Messrs. Doulton carried out the manufacture of the material for the Albemarle Hotel, Piccadilly; and this was done with a good many doubts and fears, because it was found almost impossible to attain to that degree of uniformity which the manufacturers thought at that time to be desirable. A few years later, however, a very close approximation to uniformity was attained with the same material, but after some seven or eight years (the feeling for true art having meanwhile advanced in this country by leaps and bounds) a London architect specified for his new building in the City that he must have all the varieties of colour to be found on the Albemarle Hotel, and, if possible, two other tints to increase the two extremes. A few weeks ago I pointed out to a well-known Manchester architect that the architects of the Albemarle Hotel had selected two ashlar blocks, just above the cornice over shops, to have their names cut in as architects of the building, and that these two blocks happened to show the two extremes of colour to be found on the elevation. I was greatly struck by the pregnant remark made by this Manchester architect. He said: "I can tell you why that is—in that case 'you had an artist as well as an architect.'"

Before we pass from the subject of uniform or varied colour, let us consider for a moment what has been so often done even with regard to stone buildings, which, of course, cannot give you anything like the glory of variety of which terra-cotta is capable. You design a grand public building. You write your specification of uniformity of colour for the stonework, and then, properly desiring to give the public a foretaste of the good things you have in store for them, you call in the aid of the artist to colour up your perspective. And who is the artist? Surely he is the man who by patient observation has learnt something of the beauty and variety of colour in nature. Does he then conform to your specification? Certainly not. He would make no picture if he did. But he puts in as much variety of colour as he thinks could possibly be got out of the stone you propose to use if you received it from kind Nature's hands without selection as to colour, the result being that you banish from your building by your specification, with the help of



your clerk of works, those qualities of colour that make your perspective delightful.

Coming to terra-cotta again, should not your desires tend in the direction of getting out of the material all the variety of which it is capable, rather than dragging it down to the closest approximation to uniformity attainable? Let me not be misunderstood here. I am not advocating any colouring dodges, nor any method of manufacture which is in any way or degree fictitious; on the contrary, I am pleading for that which is genuine and natural. The saddest thought I have to-day about colour in terra-cotta buildings is that you do not really know what value and beauty you might have if only you would let kind Nature have her way. Let us but have five years of honest work, good, sound material which shall show that the ardent tongues of the kiln-flames have indeed played around it, and that men have the courage to build with material which has been produced in a natural way, and we should then have architects who would have learnt by experience how to make the kiln-flames their very good servants.

My third principle is (c) that *the nature and properties of a material should suggest the true methods of its use*. It is a true and proper method to put wood mouldings together with mitre-joints, because it is the natural way to produce those mouldings by using a plane, which necessitates that method of jointing.

Now for the few simple definitions.

DEFINITION No. 1.—*What is the true function and province of a brick?* A brick is a humble but most useful member, and if kept within its proper sphere will give all that should be desired of a brick. The humbleness of its origin should always be borne in mind. Made by man—generally by machinery—and by reason of uniformity of size and the necessity for cheapness, brick is perhaps the most uniform of manufactured building materials. Every step in the manufacture tends this way, and it is only in the kiln that any chance for variety occurs. So long as the brick is used *as a brick*, and does not attempt to compete in appearance or to perform the functions of the superior materials, such as stone or terra-cotta, all is well; but I notice, especially in some Northern cities, an unhappy craving after *making a match* between terra-cotta and brickwork, and I take the liberty of forbidding the banns, because the parties are not agreed. I refer of course to those staring, glaring red fronts obtained by the use of those articles known by the ambiguous and misleading title of “terra-cotta-facing bricks,” the result being a uniform “smugness,” as Mr. Ruskin calls it, and the effect, to my eyes, particularly offensive. Some one will say this is done to keep the building clean in a smoky atmosphere. Would it not be better to let the terra-cotta dressings be emphasised by their superior cleanliness, and the brickwork give value to them by maintaining a duller tone? When you can secure cleanliness with good variety of colour you will inaugurate a new era in city architecture, and this is now at your command; but consider for a moment what the craze after cleanliness coupled with uniformity would really mean if carried to its legitimate conclusion. Imagine your important public building faced throughout with white glazed bricks—nay, more, take away the relief given by the multiplicity of beds and joints, and try to think of your front in one staring flat sheet of white enamelled iron, and see if you can bear the thought, much less the reality!

DEFINITION No. 2.—*What is a terra-cotta block?* Excuse a Scotch answer. It is not a stone. It is not a brick. It has distinctive characteristics of its own. It is an article made by hand—generally out of a plaster or other mould—so that it has one flat back or side to turn out upon; with this limitation, it may be of any conceivable form. The distinctive difference between a brick and a terra-cotta block is that the brick is, or should be, confined to one size and shape, or, at most, to a very few sizes and shapes, whereas the terra-cotta block may be of every shape

imaginable. It is a block to build with, and should be of handy and not great size—rarely exceeding a cubic foot in bulk. Its form may be vastly more complex in the way of dovetailing block into block than could be possible with stone. It has seen the fire, and should carry the evidence of this fact upon its face. It does not pretend to absolute truth or straightness; nevertheless, if properly jointed, it will, with its fellows, carry out good architectural lines in the building. The ornament upon it should look like modelled clay—not carved stone, or wood, or cast-iron.

DEFINITION No. 3.—*What is a clothed structure?* A structure which by reason of its slight appearance in proportion to the load it carries at once suggests that it is a compound structure of steel or iron clothed with terra-cotta. Can there be anything wrong in candidly admitting the fact? Nay, rather is it not honest and right to admit it, and to avoid any pretence of your 30 or 40 feet flat arch being supported by its arch jointing? Terra-cotta offers an unrivalled material for clothing steel or iron structures; but I think we have yet to see the ideal building which, by its lightness and fairy-like detail, shall at once convey the idea of its construction, and shall show a *good style of architecture* carried out in terra-cotta exactly suited to the case. We have, of course, seen many sham structures—a small stanchion boxed out to suggest a powerful pier—besides those feats of the engineers where the few and slender supports to the building are entirely masked by mirrors.

Coming to the lessons to be derived from the modern use, and bearing in mind the above principles and definitions, we may say at once that the modern use has most certainly and abundantly vindicated the claims of the material to be classed among the most useful and ornamental of building materials. It must be borne in mind that within the present generation the modern architects have had to learn how to design structures suited to their purposes in this material, and the manufacturers have had to prove the values of widely differing raw materials, and to perfect various methods of manufacture; and to-day we have fine terra-cotta buildings designed by leading architects in almost every important city and town in the kingdom, not to mention many large and important works abroad.

It may be useful here to ask, Which of the recognised styles of architecture has the modern use demonstrated to be best suited to expression in this material? To this we would reply that the purely classic styles which depend so much upon the dignity of the large and unbroken mass of marble or stone for their true expression are certainly the least suited to a material which calls for expression by many small elements forming any large feature; but, on the other hand, the Arabic, Mauresque, or Indian styles could hardly be truly expressed in a country like ours in any other material, unless at enormous expense. The Byzantine and early Gothic styles would find the material well suited to most if not all their traditional forms—perhaps the Romanesque, Norman, and Venetian Gothic best of all. Something may be successfully done by careful use of the Renaissance; but the architects who have made the best and truest use of the material are those who have allowed the natural qualities of the material to suggest the forms in which it should be used, and we need not look far to find many striking examples of this in the works of those masters whose names are connected with the more worthy and important buildings erected in terra-cotta. Mind, I do not say it is not possible to carry out the purely classic styles in terra-cotta—it has been and can be done. Architects do not suffer to-day in any branch of art or manufacture from any lack of power on the part of those who practise such arts and crafts—far from it—but the one quality a master in any branch of the art requires to-day more than any other is surely the power of restraint. This power, however, where most fully shown need not in any way cripple invention, and with a material like terra-cotta, when fairly understood, there is endless opportunity

for invention. Is it not high time for that extremely familiar feature, the entasized pilaster, to have a rest? In his several varieties of plain, fluted, reeded, panelled, &c., he has been very much in evidence during the past ten to fifteen years, and I suggest it is time he had a rest—I will not say a decent burial, but this I do say, that any design which has the entasized pilaster for its leading feature is sure to develop into forms which, whilst they can be executed in terra-cotta, are not such as will show the material at its best. And I venture to think that architects ought to be thankful to have at command a material which invites them to fresh woods and pastures new.

I do not consider that it is needful for an architect to become an expert in terra-cotta construction before he can use the material with success. If this were so, I think it would be one of the strongest objections to be urged against the material. I do not think the architect need worry himself with manufacturers' questions as to the structure of the body, methods of manufacture, kilns, firing, &c. But it is desirable—nay, needful—in the highest degree to successful use that there should be close touch and association between the architect and the skilled expert in the use of the material. Let but the architect design with a mould-made element of any imaginable form in his mind, but not exceeding generally about a cubic foot in bulk, and then let the expert have his say in the method of construction and jointing, and I venture to predict success all along the line. I have mentioned a second time the mould-made small element because I think that will always suggest most readily true form for this material. But there are many other methods of manufacture, all of which possess special and interesting qualities and characteristics, and to those architects who have acquired facility in designing for terra-cotta I would say, "Here are matters which would 'truly interest without worrying you.'" But for those who are but beginning to use the material, I think the mould-made element is a good thing to have continually in mind.

*Durability, cost in comparison to stone, and what not to do.*—As to durability I cannot do better than call your attention to a specimen which was made at Lambeth somewhere about 1750 to 1770, and formed part of the external decoration of Llewenni Hall, in the Vale of Clwydd. The mansion was burnt down soon after it was built, and the medallion exhibited, with other terra-cotta features, lay about the grounds for over a hundred years. It is as sound and good as ever, and the modelling perfectly sharp. The figure of Britannia on the top of the Liverpool Exchange is another terra-cotta example of about a hundred years ago. I may also refer to the Natural History Museum at South Kensington, of which the worst fault its enemies can discover is that it looks almost as clean to-day as when first built.

Now, as to that bugbear Cost, I propose by means of a simple diagram to place clearly, if I can, before your minds the conditions which govern the costs of the two materials. Here is a rough drawing of one of the familiar objects on the south banks of the Thames—the square shot-tower. It is really built of brick, but I have taken the liberty of showing it built in ashlar courses for my purpose.

Now this would be a cheap structure if built in stone, all the shaft part in plain labour, with a little plain circular sunk labour to the bull's-eye openings. It is square on plan, and therefore if it were to be built in terra-cotta we should require models and moulds for right and left hand quoins, and, say, four varieties of closers and bonders—six models and moulds, besides those for the circular openings. The amount of repetition to be got out of these moulds would render this structure cheaper in terra-cotta than in any wrought stone. But supposing the tower were to be round on plan instead of square. You would at once at least double the cost in any wrought stone, and could not have any sawn faces, and you would have to multiply the cost of your circular on circle openings by at least three

times their value when the tower was square. But how would the matter stand with regard to terra-cotta? You do not require any quoin moulds at all, and would probably do with less closer moulds—say half the moulds required for the square tower; whilst as to the openings, the cost of models and moulds would be slightly greater than when on square plan; but the repeats of the circle on circle would be just as cheap as when the openings were on the flat wall—proving, I think clearly, this rather surprising fact, that the structure which is most costly in stone is precisely that which is cheapest of all in terra-cotta.

Now, let us take an instance of *what not to do*. Just recently I have had the honour of carrying out an extension to the entrance lodge of Sion House, Isleworth. This work was done, I believe, somewhere about a hundred years ago, under some member of the Adam family. The idea was to carry out a minute and perfect imitation of stone, yet making use of the capacities of terra-cotta for repeating ornament, and yet doing everything possible to let it appear as though a marvellous amount of money had been spent in carving these small enrichments in the stone. The idea was even carried to the extent of having the plain parts of the lodges and entrance built of plain stone ashlar, and around the doorways a groove or chase was cut in the stone jambs about 3 inches away from the reveals, and about 7 inches wide by  $1\frac{1}{2}$  deep, into which was fixed an elaborate guilloche ornamental band in terra-cotta, or, as it was evidently intended, artificial stone. Studying this work very carefully, I was greatly surprised at its wonderful accuracy; I have no doubt whatever that it was set out with the utmost mathematical precision; and altogether the imitation was so clever that at first I thought it was a case of my being asked to imitate in terra-cotta work which had been wonderfully well done in stone, and I should not have dispelled this idea without actually taking the blocks down, but that kind Nature (who hates deception, however clever) intervened at one point, viz. the kiln, and man was under the necessity of putting in a  $1\frac{1}{2}$  inch closer, because the accumulated variation of shrinkage proved one too many for his mathematics! The closer exhibited, though only  $1\frac{1}{2}$  inch long, shows the entire section of the elaborately enriched frieze and cornice in one piece 18 inches high—the upper member projecting about 5 inches, and the cornice having 3 enriched members in 5 inches. There is no attempt made to produce blocks to build into the wall, but simply a slab of ornamental deception to hook on to the front with cramps! In carrying out the extension of the work recently, the frieze was made narrow on the bed, and the cornice, a separate block, much wider on bed, to get proper bond in the wall, and the metal cramps were of course dispensed with.

The lecturer then showed a number of diagrams, photographs, &c., giving details of work actually carried out, illustrating various characteristic structural features, such as a large elliptical arch or hood over porch formed of a double row of dovetailed arch blocks, which, by interlocking, neutralised the outward thrust, and at the same time provided ducts in the thickness for the wires of electric lamps in panels of the soffit.

A number of different methods of clothing iron or steel joists and stanchions with architectural features.

Methods of carrying large overhanging balconies by means of ironwork combined with terra-cotta and concrete.

A section of a large fountain composed entirely of interlocking terra-cotta blocks, giving large projections without the use of a single piece of metal in the entire structure.

Photographs of specially designed clay-like treatment of ornament, &c.

After calling attention to these and other matters of interest on the cartoons, the lecturer said:—

I cannot do better than close my subject with a quotation from the able Paper\* read by Mr. Ingress Bell before



the Royal Institute of British Architects on 27th February 1893. After pointing out that the course of art and architecture in England might be said to have been at its highest point in the reign of Henry VII., he said:—

Can we take up, at its best point, this last distinctive phase of our national architecture; and in a more congenial material restore to it the life and thought which inspired its highest efforts; carrying it forward, as its authors might have done, with the command of our modern aids?

It is conceivable that by persevering trial a form of architecture may be evolved in which, under shelter, protection, and support of the leading forms which should mark the constructive scheme, subordinate and independent spaces, on a grand scale, may be reserved for artistic treatment in relief—spaces which should be to the modeller what the canvas is to the painter, and upon which he should be free to expatiate subject to the architect's general control; the wall panelling and traceries giving up their formalism, their wearying iteration, and repetition of meaningless forms, and yielding to direct and individual treatment, in which all graceful lines, all pleasant variations of surface, and all suitable natural forms should find a place; the whole frankly built up, and projected from the plane prepared for its display—in effect, a sort of *gesso* in a far more pliant and accommodating medium. For, as a vehicle for the expression of artistic fancy, there is nothing which can for a moment compete with the kindly clay—so responsive to the artist's lightest touch, so suave and facile in the working, and so tenacious and enduring in its grasp of the life with which his skill endows it.

I do not for a moment suggest that we can hope to arrive at a nobler form of architecture than that which our ancestors have bequeathed to us. That is not the question. It is rather this—Have the possibilities of the older art, when confined to the traditional materials, been played out; and does the new material placed in our hands afford an opportunity for new and legitimate forms of expression?

## LEGAL.

### Building Line: London Building Act 1894, sec. 200.

THE LONDON COUNTY COUNCIL v. GORRELL.

On 27th January and 2nd February, before Mr. Lushington, at Bow Street Police Court, proceedings were taken on behalf of the London County Council against Messrs. Gorrell, builders, for erecting a building beyond the general line of Lincoln's Inn Fields without the written consent of the Council, contrary to section 200 of the London Building Act 1894.

Mr. Chilvers appeared for the Council; Mr. Charles Lloyd for the defendants.

No. 50 Lincoln's Inn Fields was formerly fronted by a forecourt 45 feet long by 28 feet wide, sloping slightly from the house towards the fields, with vaults extending under a portion of it. Early in 1895 the defendants demolished the old building, and erected a new one in its place. In addition to doing this, they excavated the vaults in the forecourt, and erected on the site four offices above the level of the adjoining pavement. The roof was of concrete and iron, with skylights above. The boundary wall had not been raised. The penalty was claimed under section 200 (1) (j) of the Act, not under section 200 (3) (a), which applies only in the case of non compliance with a magistrate's order.

Mr. Lushington, on the facts above stated, held that the defendants had no right to do what they had done without the consent of the County Council, and they had certainly committed an offence under the Act. No penalty was imposed, but the defendants were ordered to pay five guineas costs.

### Lifts in Buildings: London Building Act 1894, section 209.

THE LONDON COUNTY COUNCIL v. RICHMOND & CO.

On the 27th February, at the North London Police Court, Messrs. Joseph Richmond & Co. (Lim.), of Kirby Street,

Hatton Garden, were summoned before Mr. Bros for failing to serve notice on Mr. Frederick Meeson, the District Surveyor of Hackney, before erecting an hydraulic lift at the new women's block at the Hackney Workhouse.

Mr. Judson appeared for the surveyor, and Mr. Hudson for the defendants.

The defendants had erected a lift, and in doing so had cut into the external walls for the purpose of fixing a couple of girders, and drilled a half-inch hole in the stone staircase for the purpose of holding a bolt. Section 209 of the Act of 1894 provides that every addition to or alteration of a building, and any other work done for any purpose on, to, or upon a building (except that of necessary repair not affecting the construction of any external or party-wall), shall, so far as regards such addition or alteration or other work, be subject to the provisions of the Act.

Mr. Meeson, the surveyor, in his evidence, stated as his opinion that any work which affected the external walls necessitated notice to the district surveyor. He should not, however, interfere with a person for driving a nail for a picture into an external wall, or with a builder taking bricks out of an outside wall for the erection of a scaffold, but if a water-pipe were carried through a wall the witness thought a notice was necessary.

Mr. Joseph Richmond said that his firm had erected some hundreds of similar lifts in all parts of London, and in almost every public building in the metropolis. Never on any occasion had the district surveyors insisted on notice, nor had any been given. On one or two occasions, when deep pits had been sunk near foundations in Cheapside, the district surveyor had been warned, but he had not deemed it within his province.

Mr. Bros said he was of opinion that there was in the Act of 1894 a much more stringent provision than in the old Building Act; and in view of that provision, which laid down that in any public building notice must be given when any external or party-wall or staircase was affected, he came to the conclusion that he must find in favour of the district surveyor. However, as this was a new question, he should only impose a small penalty of 20s., with 2s. costs.—He agreed to state a case for the opinion of the High Court.

### Building Line: Building erected in Substitution of formerly existing Building.

THE LONDON COUNTY COUNCIL v. PRYOR.

The Court of Appeal (the Master of the Rolls and Lords Justices Lopes and Rigby) on the 2nd and 3rd March heard the appeal of the defendant Pryor against the decision of the Divisional Court in this case, as reported in the last issue, page 300, where the facts are sufficiently stated. The same arguments were adduced as in the Court below, and their Lordships gave judgment dismissing the appeal, being of opinion that the case was distinguishable from *Lord Auckland's case*, and came within section 75 of the Metropolis Management Act 1862, as being a building, structure, or erection within the meaning of that section.

## ARCHITECTS' BENEVOLENT SOCIETY.

### Mr. Penrose's Appeal.

The President of the Architects' Benevolent Society (Mr. Penrose) issued on the 9th March to the architectural profession of the United Kingdom an appeal for annual subscriptions or donations. The names of those who have responded to Mr. Penrose's appeal will be duly acknowledged, and it is hoped that the amount already received will be considerably augmented by further contributions. A copy of Mr. Penrose's letter here follows:—

DEAR SIR,—During my term of office as President of the Royal Institute of British Architects it has been my duty

and pleasure to preside also at the meetings of the Council of the above Society, and I have thus become acquainted with its extreme usefulness in alleviating the sad necessities of members of our profession who, through no fault of their own, have been reduced to a state of need, and of the widows and orphans of architects who have been left partly or wholly destitute.

The Council distributes the funds entrusted to it with regard only to the necessities of the applicants, whether they or their husbands or parents may or may not have been members of the Institute, and the degree of help and comfort which they have been able to afford to aged and otherwise helpless persons encourages the hope that they may be empowered by further liberal support to do much more in the same direction. In some striking instances they have been able to render, with the happiest results, substantial assistance to young architects in temporary distress.

The very moderate income available for purposes of relief necessarily limits the scope of the Society's beneficent efforts; and the income is likely to be further diminished by the sad losses which we have during the last year sustained in the death of some of our oldest and most liberal supporters. It is earnestly hoped, however, that these will be replaced by equally generous benefactors. I venture particularly to bring the claims of this Society before architects in successful practice as an institution whose support involves a moral obligation which should not be ignored, and I would point out that its sympathetic operations are of a national character, extending as they do to all parts of the United Kingdom, whilst the large majority of its supporters is confined to the Metropolis.

My appeal for further support is addressed, in the first place, to architects, and to others interested in the profession of architecture, who have not hitherto contributed to our funds; and, in the second place, to those subscribers of sums not exceeding the average amount of one guinea, from whom increased contributions are asked in order that our Society may compare more favourably than is the case at present with the charitable institutions of other professions.

In conclusion, it gives me great pleasure to announce that to commence the list resulting from this appeal I expect a donation of £25, and one of our members, already a liberal donor, has promised a further donation of £100, and to increase his present annual subscription to £5 5s., and that others have also offered to double their present annual subscriptions—worthy examples, the mention of which may, I sincerely hope, stimulate others to acts of generosity. We only ask, however, architects to contribute according to their means, and hope to increase largely the list of annual subscribers. Any contribution, however small, will be warmly welcomed.

Earnestly trusting that this appeal may meet with a liberal response, and greatly increase the funds available for the relief of our brethren in distress,—I remain, yours very truly,  
F. C. PENROSE.

#### Forty-sixth Annual General Meeting.

The forty-sixth Annual General Meeting of the Architects' Benevolent Society was held on Wednesday, the 11th March, in the rooms of the Institute, Sir Arthur Blomfield, A.R.A., occupying the chair, in the absence of the President, Mr. Penrose, F.R.S. The Report and Balance Sheet for 1895 [see below] were read and adopted. A vote of thanks having been passed to the retiring members of the Council, the Council for the year of office 1896-97 were elected as follows:—The President for the time being of the Royal Institute, President; Mr. T. M. Rickman, Mr. R. St. A. Roumieu, Mr. J. T. Wimperis, Mr. Thomas Harris, Mr. H. C. Boyes, Mr. W. Kidner, Mr. Geo. Scamell, Mr. Zeph. King, Mr. George Inskipp, Colonel R. W. Edis, Mr. Arthur Crow, Mr. E. A. Gruning, Mr. G. T. Hine, and Mr. W. Hilton Nash. Votes of thanks were passed to Mr. Arthur

Cates, as Hon. Treasurer, and to Mr. Percivall Currey, as Hon. Secretary, each gentleman being re-elected in his office for the ensuing year. Mr. W. Hilton Nash and Mr. John Hebb were thanked for their services as auditors during the past year; Mr. Wm. Woodward and Mr. Henry Hall were elected auditors for the ensuing year. On the motion of the Chairman, seconded by Mr. E. H. Martineau, Mr. J. Macvicar Anderson was elected Trustee in the place of the late Mr. Thomas Cundy. Votes of thanks having been passed to the Institute for office accommodation, and to Sir Arthur Blomfield for presiding at very short notice, the meeting, which was well attended, terminated.

#### Report of the Council.

GENTLEMEN,—

It was the pleasant duty of the Council of the Architects' Benevolent Society in their last Report to congratulate the contributors to its funds on the Society's having attained during the year 1894 its greatest degree of financial prosperity since its foundation, the amount received in subscriptions being largely in excess of any previous year. In submitting their Forty-sixth Annual Report the Council have, therefore, considerable satisfaction in stating that the favourable position at which the affairs of the Society had then arrived has been maintained, with a slight improvement in regard to both donations and subscriptions, during the year on which they have now to report.

While, however, having this cause for satisfaction, the Council would at the same time direct attention to the fact that a greater demand has been made upon its resources than in former years, and that although the sum of £413. 15s. was the income derived from subscriptions during the year, £70 was paid to pensioners, and £604 to applicants for grants, together making a total of £674 (as against £589 in 1894) distributed in relief. Large as this amount would seem, the Council are convinced that a smaller sum would not have afforded adequate relief to the persons whose wants were brought under their consideration, there being forty applicants for grants, out of which, after proper investigation and recommendation, assistance was afforded to thirty-six.

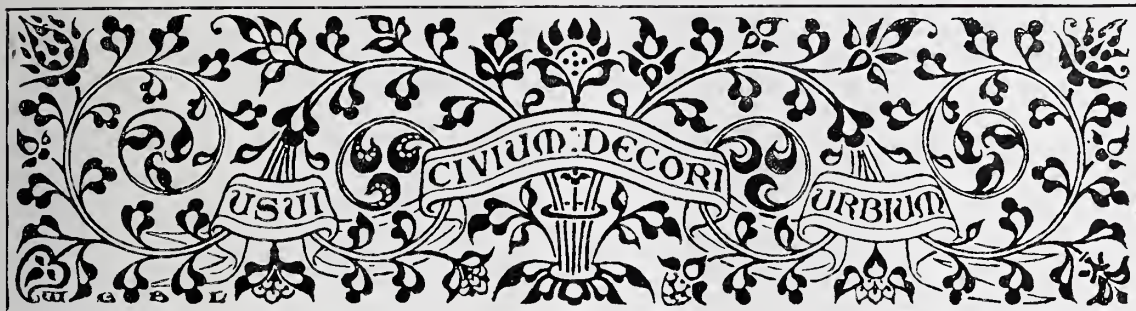
The Council would take this opportunity of stating that their grounds for satisfaction in the affairs of the Society are based on the increase of the amount received in subscriptions, and while tendering their cordial thanks to those who are already supporters of the Society, they are assured that the amount received in subscriptions for the year, £407. 4s., does not represent what should be the desire of the successful members of the architectural profession in behalf of their less fortunate brethren, who, in the prime of life, through illness, or in old age, through failing powers, may be left in a condition of want; or in behalf of the widows and children of architects suddenly left more or less unprovided for. The Council venture to hope, therefore, that the list of subscribers may be materially augmented during the present and future years.

With regard to the capital account, a balance of £169. 8s. 8d. having been brought over from 1894, an investment was made in the purchase of £100 Caledonian Railway 4 per cent. Debenture Stock at a cost of £143. During the year the sum of £91. 7s. (as against £85. 14s. in 1894) was received in donations, so that the balance in the hands of the bankers at the credit of the capital account on the 31st December last was £117. 15s. 8d. The donations were chiefly contributed by Mr. Graham C. Awdry (£25), Colonel R. W. Edis (£21), Mr. Wm. Emerson (£7. 7s.), Mr. Zeph. King (£5. 5s.), Mr. Wm. Kidner (£5. 5s.), Mr. A. H. Tiltman (£5), Mr. Geo. T. Hine (£5), and Mr. George Inskipp (£3. 3s.). A further sum of £5. 15s. was also contributed as a donation by the Spring Gardens Sketching Club.

Mr. Arthur Crow and Mr. John T. Christopher have each most generously increased their annual subscriptions







## BRICKWORK TESTS: REPORT ON THE FIRST SERIES OF EXPERIMENTS.

By WILLIAM C. STREET [F.] and MAX. CLARKE [A.].

Read at the General Meeting, Monday, 30th March 1896, and, with the notes and statistics which follow, registered at Stationers' Hall as the property of the Royal Institute.

WE have to lay before the Institute an account of the proceedings of the Science Standing Committee, so far as they have at present reached, in the series of experiments which the Committee have undertaken for the purpose of ascertaining the amount of resistance possessed by brickwork under great crushing loads.

The subject may be thought to be one that comes more within the province of the engineer than of the architect; but, not being able to find any reliable data, and the text-books and authorities differing so widely, the committee considered it desirable to institute some systematic experiments whereby the average and relative strengths of bricks and brickwork of different varieties could be determined.

The scheme was primarily submitted to the Science Committee by Mr. H. W. Burrows, and by them referred to a sub committee, consisting of Messrs. Burrows, Faija, and Street. Since then Mr. Faija has died, and Professor Unwin and Mr. Max. Clarke have been added to the sub-committee.

The experiments finally decided upon were to be confined to the following varieties, as affording types of the several kinds most generally employed, viz. :—

- |                   |                        |
|-------------------|------------------------|
| 1. London stocks. | 3. Leicester red.      |
| 2. Gault.         | 4. Staffordshire blue. |

Two piers of each kind, 6 feet high and 18 inches square, were to be built, both in lime mortar and in cement, for crushing at the end of three months, and a similar number for crushing at the end of nine months.

The reason for deciding upon having tests at two different periods was to ascertain what additional strength the brickwork gained in six months, as this is of importance, considering the great rapidity with which brick buildings are now run up, and sometimes loaded with great weights while the brickwork is quite green and very little of the mortar set.

It is now almost ancient history to relate how little response there was to the appeal for subscriptions to defray the necessary expenses; and the matter would probably have been allowed to drop had not Sir William Arrol, at the instance of Professor Unwin, generously come forward and placed at the disposal of the committee a very powerful hydraulic press, together with a large and massive testing-machine made expressly for the committee's purpose.

The next difficulty was to find a site of the necessary extent, and near to an hydraulic main. This was overcome by the kindness of the London and India Docks Joint Committee, who, through their chief engineer (Mr. H. F. Donaldson), placed at the disposal of the committee a vacant piece of ground in front of the engineer's office at the West India Docks,



and close to the hydraulic engine-house, from which water at a pressure of 700 pounds to the square inch was available.

These initial difficulties being overcome, the work of building the experimental piers commenced on the 24th July 1895, and was finished on the 13th August. The piers are built upon a temporary line of rails about 140 feet in length, and laid to a 16-inch gauge. In the centre of the line of rails Sir William Arrol's testing-machine was erected in the course of the autumn, so as to be ready for the first testing in December. A description of the machine, by Mr. J. E. Tuit, is given in an appendix [pp. 352-53].

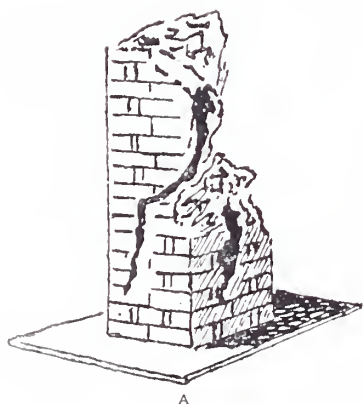
The piers are built upon wrought-iron plates,  $2' 0'' \times 2' 6'' \times \frac{1}{2}''$ , which are placed upon the rails one foot apart, and have two holes drilled in the end nearest the testing-machine, by means of which they are drawn along the rails to the machine.

The bricks, lime, and sand were bought from Messrs. Cliff & Sons, and are such as would be supplied to any builder in the ordinary way. The Portland cement was kindly given by Messrs. J. Bazley White & Brothers, Limited, and is of ordinary quality. Samples of the

**Pier No. 1.—London Stocks from Sittingbourne, in Lime Mortar.\***

6' 0" high, 18"  $\times$  18"; sectional area 2.25 sq. ft.

Built 7th August; crushed 9th December. Age 17.7 weeks.



This pier was crushed at a preliminary trial of the machine on the 9th December, and the experiment was altogether unsatisfactory, except as affording knowledge of what was required for the efficient conduct of the remainder.

The pressure water was admitted into the ram too rapidly, and the pier was crushed immediately, and before any observations could be made. Also the divisions in the gauge recording the pressure were so small as not to admit any reliable registration of the results.

The maximum pressure on the gauge appeared to be about 125 lb. per sq. in., but it was very sudden and very uncertain.

The sketch, A, by Mr. Max. Clarke, shows something like the state of the pier immediately after crushing.

Large fractures appeared on two sides of the pier extending to within two courses of the bottom, these two courses remaining sound.

In the interval between the 9th and 13th December other pressure gauges were procured and fixed, and the valve on the pipe from the hydraulic main so arranged that the pressure could be admitted very slowly.

**Pier No. 2.—London Stocks from Sittingbourne, in Lime Mortar.**

6' 0" high, 18"  $\times$  18"; sectional area 2.25 sq. ft.

Built 7th August; crushed 13th December. Age 18.3 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
—	30	9.42	4.18	—	Signs of the mortar in the interior of pier crumbling, and the pier began to bulge two courses from the top.
—	43	15.45	6.87	—	Mortar dropping out from joints near the top.
—	55	21.02	9.34	—	Pier cracked on two sides, the cracks extending downwards five or six courses in continuous lines.
—	60	23.34	10.41	—	Pier bulged, split all down, and fell.

The chief crack was through all courses, except the bottom one, vertical, and at 7 inches from an angle of the pier—i.e. at the line of closers.

A well-formed pyramid adhered to the underside of the top girder of the machine after the loose debris fell, showing normal type of failure.

The mortar was not fully set.

\* These tables have been prepared by Mr. Street, from notes taken by himself and Messrs. Max. Clarke, Dicksec, Garbutt, and Solomon.

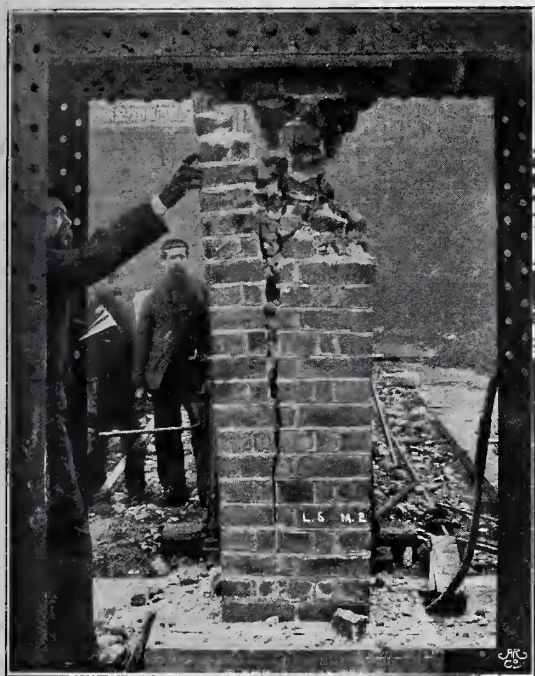


FIG. 1.—PIER NO. 2, AFTER COMPRESSION.

T. H. H.



FIG. 3.—PIER NO. 4, AFTER COMPRESSION.

T. H. H.



FIG. 2.—PIER NO. 4, GAUGE AT 110,

W. W.



FIG. 4.—PIER NO. 5, AFTER COMPRESSION

T. H. H.



bricks and of the two kinds of mortar have been tested by Professor Unwin at the Central Technical College, and the results, with notes on the same, are given in appendices by Professor Unwin [pp. 348-52].

The piers on one side of the testing-machine are in Portland cement mortar, and on the other in grey lime mortar. The cement mortar was mixed by measure in the proportion of one of cement to four of washed river sand, and the lime mortar one to two. The brickwork starts upon a bed of mortar of the thickness of an ordinary joint, and rises, as nearly as possible, four courses to the foot. The bond is the same as shown in Rivington's text-book, and is the ordinary way of building an 18-inch pier. It has a fault in permitting a small rectangular vertical joint,  $2\frac{1}{4}'' \times 2\frac{1}{4}''$ , throughout the height of the pier, in each of the angles; but it was

**Pier No. 3.—Gault Bricks from Burham, Kent, in Lime Mortar.**

6' 0'' high and  $18\frac{1}{4}'' \times 18\frac{1}{2}''$ ; sectional area 2·344 sq. ft.  
Built 7th August; crushed 13th December. Age 18·3 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
—	30	9·42	4·60	—	One crack through one brick in top course only. This was probably due to unequal distribution of pressure, the under-side of top girder of machine being concave to the extent of $\frac{1}{2}$ inch. This was corrected before the next experiments (17th December) by a plate of lead cast to fit the concavity.
—	35	11·74	5·00	—	Bricks spalling slightly, and mortar inside the pier audibly crumbling.
—	45	16·38	6·98	—	Mortar dropping out of joints at top of pier.
—	60	23·34	9·95	—	The bricks in one corner commenced cracking, and the whole pier bulging very slightly.
—	78	31·69	13·51	—	Mortar continued dropping, and general signs of giving.
—	112	47·46	20·24	—	Pier cracking badly.
—	120	51·18	21·82	—	Went all over. Crushed fairly all through, nearly every brick being broken to within five courses of bottom. Bulged on all sides at once, and evenly.

\* \* Mortar properly set for about  $1\frac{1}{2}''$  from surface only.

**Pier No. 4.—Gault Bricks from Burham, Kent, in Lime Mortar.**

6'  $0\frac{1}{8}''$  high,  $18\frac{1}{8}'' \times 18\frac{1}{8}''$ ; sectional area 2·281 sq. ft.  
Built 7th August; crushed 17th December. Age 18·8 weeks.

\* \* This pier had on one side some slight frost cracks, starting three courses from top and extending to three courses.

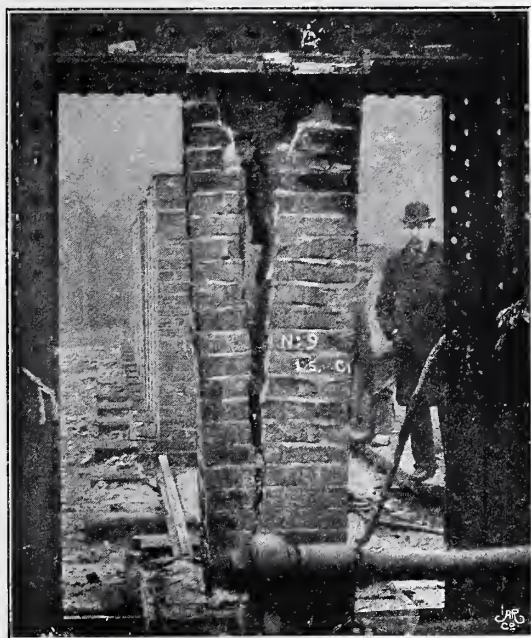
Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
10.46	10	0·14	—	—	Took its bearing.
—	30	9·42	4·12	—	Slight sounds of internal cracking or crumbling, audible on placing the ear close against pier.
—	40	14·06	6·16	—	One brick cracked at half height of pier.
10.51	55	21·02	9·21	—	Cracks visible on two sides, apparent continuations of frost cracks. Slight falling of mortar.
10.54 $\frac{1}{2}$	80	32·62	14·30	—	Cracks in bricks themselves, and mortar bulging out badly fifth course from bottom, and a bad failure in third course from top at corner.
—	90	37·26	16·15	—	Cracking badly.
—	105	44·22	19·38	—	Cracks opening, the worst fissure $\frac{1}{4}''$ wide.
11.0	110	46·54	20·40	—	Bursting out at top.
—	115	48·86	21·42	$\frac{7}{16}''$	Considerable spalling of bricks at top; many small cracks near top, but very few below centre.
11.3	118	50·25	22·03	—	Collapse, pier spread in all directions fairly evenly; final bulging was greatest about two-thirds height from bottom.

\* \* Mortar in this pier was of a brown colour for about  $1\frac{1}{4}''$  to 2'' all round from face.



T. H. H.

FIG. 5.—PIER NO. 8: COMMENCING TO GIVE WAY UNDER COMPRESSION.



T. H. H.

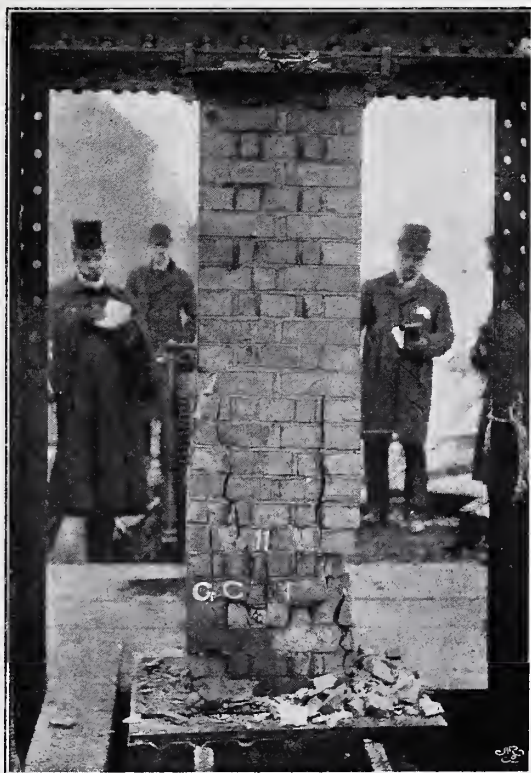
FIG. 6.—PIER NO. 9, AFTER COMPRESSION.

\* \* \* The initials "T. H. H." and "W. W." attached to the illustrations are those respectively of Mr. T. H. Howe and Mr. W. Wonnacott [4.], who took the photographs from which the illustrations are reproduced.



W. W.

FIG. 7.—PIER NO. 11. GAUGE AT 98.



W. W.

FIG. 8.—PIER NO. 11. GAUGE AT 101.



thought better to keep to actual practice than to attempt a theoretically perfect bond. Each pier had the joints struck with a weathered joint as the work proceeded, and was finished with a layer of mortar, upon which a sheet of felt was laid to prevent the top courses deteriorating from heavy rain. The building of the piers was executed under the inspection and superintendence of Messrs. Max. Clarke, Hooper, and Street, and a record of progress was kept, so that the age of each pier at the time of testing could be ascertained. The labour was supplied by a large firm of contractors, and it is with regret that the committee have to state that, during the absence of members of the committee, the bricklayers, finding the Leicester red and the Staffordshire blue bricks very hard to cut,

**Pier No. 5. Leicester Red Bricks, from Elliston, near Leicester, in Lime Mortar.**

6' 1" high,  $18\frac{1}{8}" \times 18\frac{1}{4}"$ ; sectional area 2.298 sq. ft.

Built 5th August; crushed 17th December. Age 19.1 weeks.

\* \* This pier had frost cracks through top three courses, three on one side, and one on another.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
11.26	7	—	—	—	Just bearing.
11.32	30	9.42	4.09	—	Slight internal cracking audible.
11.35	60	23.34	10.15	—	No signs of any outward crack or failure, but sounds of internal failure, audible by ear against pier.
11.36	85	34.94	15.20	—	Mortar dropping off very slightly from bottom joints.
—	95	39.58	17.22	—	Crack in brick, top course.
—	100	41.90	18.23	—	Slightly spalling, top course.
—	115	48.86	21.26	—	Mortar crushing out near bottom.
—	125	53.50	23.28	$\frac{1}{16}"$	Mortar steadily falling in small pieces.
—	134	57.67	25.09	$\frac{3}{16}"$	—
—	145	62.78	27.31	—	Many fine cracks at bottom, a few at top.
11.42	150	65.10	28.32	—	Giving steadily, especially near bottom, but no crack more than $\frac{1}{16}"$ open. No continuous crack. Pressure shut off for two minutes, and gauge fell 5 lb.
11.45	158	68.81	29.93	—	On re-admitting pressure gauge rose to 158, when the pier gave way evenly.

\* \* A portion, eight courses high, remained of the southern face, but only part of three courses on the northern face; the southern face was the first to show signs of serious crippling, and was the one of which most remained after the final crippling.

**Pier No. 6.—Leicester Red Bricks from Elliston, near Leicester, in Lime Mortar.**

6' 1" high,  $18\frac{1}{8}" \times 18\frac{1}{4}"$ ; sectional area 2.313 sq. ft.

Built 9th August; crushed 17th December. Age 18.6 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
12.8	—	—	—	—	Top two courses on two sides slightly damaged by frost.
12.9 $\frac{3}{4}$	8	—	—	—	Took bearing.
12.17	50	18.70	8.04	—	Slight indications of mortar inside crumbling.
12.18	70	27.98	12.09	—	Distinct internal crack.
—	90	37.26	16.11	—	Mortar falling from top joints.
—	195	44.22	19.11	—	Mortar dropping out from top joints, and a few single bricks cracked near top and bottom as the pressure gradually rose to 120.
12.21	145	62.78	27.14	$\frac{3}{8}"$	Mortar coming off face of joints, and several very slight cracks.
—	163	71.13	30.75	1"	Bricks bursting out from the third to the sixth course from the top.
—	167	72.98	31.55	—	Pier bulged and fell. The greatest bulging was near the middle. The five lowest courses were practically unshifted in position. —



FIG. 9.—PIER NO. 11. GAUGE AT 103.

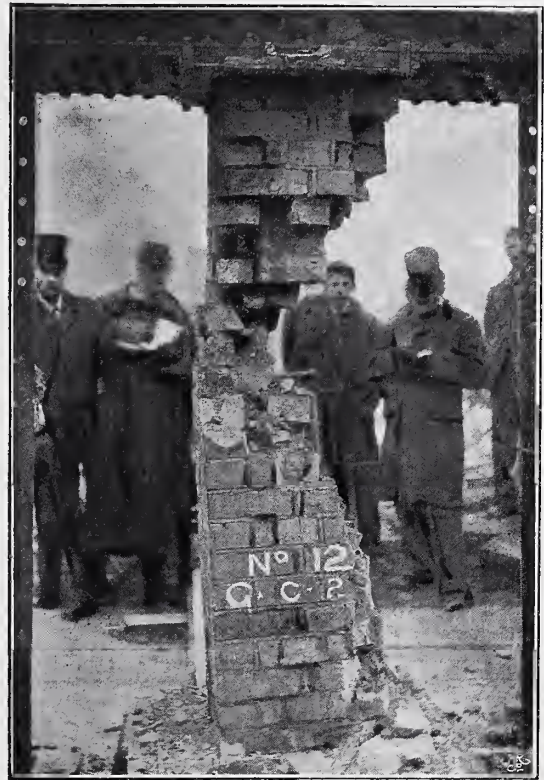
FIG. 11.—PIER NO. 12, AFTER COMPRESSION. <sup>1</sup>/<sub>2</sub> FRONT VIEW.

FIG. 10.—PIER NO. 12. GAUGE AT 97.



FIG. 12.—PIER NO. 12, AFTER COMPRESSION. BACK VIEW.



filled in a great portion of two piers with closers of London stocks. This quite destroyed the value of these piers, and has put the committee to the expense of building fresh piers to take

**Pier No. 7—Staffordshire Blue Bricks from Fowley Regis, in Lime Mortar.**

6' 0 $\frac{3}{16}$ " high, 18 $\frac{1}{8}$ "  $\times$  18 $\frac{1}{8}$ " ; sectional area 2·281 sq. ft.  
Built 9th August ; crushed 17th December. Age 18·6 weeks.

\* \* This pier looked sound all over.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
1.39	10	—	—	—	Took bearing.
1.45	90	37·26	16·33	—	Sounds of mortar cracking.
—	120	51·18	22·43	—	Sharp crack heard, no visible crack, mortar falling slightly from joints about centre of pier.
—	130	55·82	24·03	$\frac{9}{16}$ "	Mortar dropping occasionally, audible cracks (like tightening up a wooden screw).
—	150	65·10	28·54	—	Two bricks cracked near centre on eastern side.
—	152	66·02	28·94	$\frac{8}{8}$ "	—
—	160	69·74	30·57	—	Two bricks broken 4 $\frac{1}{2}$ " from angle, in line with the closers, three courses high about centre of pier.
—	190	83·66	36·67	—	Faces of joints burst off nearly all over pier.
—	220	97·58	42·77	$\frac{15}{16}$ "	Bricks cracked on northern face and mortar joints dropping out all over.
—	255	113·82	49·89	—	General disturbance of joints all over exterior.
—	265	118·46	51·93	—	Very audible cracks.
—	300	134·70	59·05	1 $\frac{5}{16}$ "	Many cracks on both sides about middle. Gauge fell and then pressure was allowed to stand (water cut off).
1.58	350	157·90	69·22	—	On pressure water being turned on, it went up to 350, when the sides bulged and the pier collapsed rather sharply. Cracks worst at lines of closers.

\* \* After failure portions remained on eastern side ten courses high ; northern side, seven courses high ; southern side, ten courses high.

**Pier No. 8.—Staffordshire Blue Bricks, from Rowley Regis, in Lime Mortar.**

6' 0 $\frac{3}{16}$ " high, 18"  $\times$  18 $\frac{1}{8}$ " ; sectional area 2·281 sq. ft.  
Built 3rd August ; crushed 17th December. Age 19·4 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
2.23	10	14	—	—	Took bearing.
—	90	37·26	16·33	—	No sign of failure anywhere.
—	115	48·86	21·42	—	Slight falling out of mortar joints.
—	120	51·18	22·43	—	Slight internal crack of brick.
—	130	55·82	24·03	—	Cracking audible on placing ear close to pier.
—	150	65·10	28·54	—	Sounds increased.
—	180 to	79·02	34·64	—	Mortar split off face of many joints all over.
—	190	83·66	36·67	—	—
—	200	88·30	38·71	—	Mortar joints dropping out.
—	210	92·94	40·74	—	Mortar continually falling.
—	235	104·54	45·83	$\frac{13}{16}$ "	Appreciable sounds of cracking.
—	260	116·14	50·91	—	Several small surface cracks.
—	285	127·74	56·00	—	Mortar falling out worse.
—	300	134·70	59·05	1"	Falling on the line of closers.
—	325	146·30	64·14	—	Cracks becoming more continuous all down the line of closers on each side.
—	375	169·50	74·31	—	Cracks worse, but none open $\frac{1}{16}$ ".
—	400	181·10	79·39	—	Giving, splitting ; gauge ran back to 375, then corners came out, i.e. pieces about 2" long, at centre of height and bounded by the closers. Complete failure followed.

\* \* After the failure, parts of ten courses were left on northern side, less on other sides.

their place. This is an unpleasant admission to make, but, if the experiments are to be of any value, everything in connection with them must be told, and nothing concealed.

The testing of the piers commenced on the 9th December last, when the first pier, built with London stocks in lime mortar, was crushed in an experimental trial of the machine. On this occasion the pressure was applied much too suddenly, and the divisions on the gauge indicating the pressure were so small as not to admit of any reliable registration of the results. This trial, of which the records are of little value, enabled these defects to be ascertained and to be remedied. A better arrangement of valve, admitting the pressure very slowly, was obtained, and, at the request of Mr. Max. Clarke, a testing gauge, showing the pressures more minutely, was kindly lent to the committee by Messrs. W. & J. Fraser, of Commercial Road. The second meeting was on the 13th December, when piers Nos. 2 and 3 were crushed. (The results of all the crushings are given in the tabulated statements appended, pp. 334–344.) It was noticed on this occasion that the underside of the upper part of the testing frame was concave to the extent of about half an inch, and did not permit the equal distribution of the pressure upon the heads of the piers. In placing No. 2 in position the space between the head and the underside of the frame was packed with sheets of felt and small pieces of thin timber. With No. 3 pier this space was packed with two sheets of felt and one sheet of 7 lb. lead.

**Pier No. 9.—London Stocks from Sittingbourne, in Cement Mortar.**

6' 0 $\frac{1}{8}$ " high, 18"  $\times$  18 $\frac{1}{2}$ "; sectional area 2.266 sq. ft.  
Built 25th July; crushed 20th December. Age 21.1 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
10.26	15	2.46	1.08	—	Bearing taken suddenly.
10.34	—	—	—	—	Pressure resumed.
10.37 $\frac{1}{2}$	40	14.06	6.20	—	
10.38	45	16.38	7.22	—	Slight crack in top course.
10.39	50	18.70	8.25	—	Bricks spalling.
10.40	60	23.34	10.30	.07"	Cracks increasing, apparently due to unequal bedding.
10.41	70	27.98	12.34	—	Top two courses cracked, and crack extending downwards.
10.42	75	30.30	13.37	$\frac{1}{8}$ "	
10.42 $\frac{1}{2}$	80	32.62	14.39	.20"	Top two courses well crushed at corner. Crack ten courses down.
—	85	34.94	15.42	.25"	
10.44	88	36.33	16.03	—	Failed completely, pier split right down by closers.

**Pier No. 10.—London Stocks from Sittingbourne, in Cement Mortar.**

6' 0 $\frac{1}{4}$ " high, 18 $\frac{3}{4}$ "  $\times$  18 $\frac{1}{2}$ "; sectional area 2.458 sq. ft.  
Built 26th July; crushed 20th December. Age 21 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
11.12	11	.60	.24	—	Into bearing.
—	25	7.10	2.88	—	
11.16 $\frac{1}{2}$	40	14.06	5.72	.10"	Slight crack in one brick at top corner.
11.17	45	16.38	6.66	.15"	
11.18 $\frac{1}{2}$	50	18.70	7.60	.20"	
—	65	25.66	10.44	.22"	
11.21	70	27.98	11.38	.25"	
11.22	75	30.30	12.32	.30"	Failing, bottom course crushing.
—	80	32.62	13.27	.32"	
11.23	83	34.01	13.83	—	Failed completely.



After crushing No. 3 pier it was decided to adjourn the proceedings till Tuesday, 17th December, and that in the interval a mould should be taken of the underside of the upper part of the testing-frame, and a lead casting made to fit the concavity, which could be applied to the head of each pier when placing it in position in the machine.

The work was resumed on the 17th December, and in the interval the underside of the upper portion of the frame had been fitted with a plate of lead moulded to fit the concavity, and held in place by sheet iron and iron clips. On the head of each pier tested there was placed first a sheet of felt, and then a sheet of iron  $\frac{1}{16}$ " thick, so that the pressure may be considered to be fairly well distributed. On this occasion piers Nos. 4, 5, 6, 7, and 8 were crushed, with the results noted in the Table. The tests of the piers in lime mortar which were intended for the first period being thus completed, and it being nearly 3 P.M., it was resolved to adjourn, and commence the crushing of the piers in cement mortar on Friday, 20th December, when

**Pier No. 11.—Gault Bricks from Burham, Kent, in Cement Mortar.**

6' 0" high,  $18\frac{1}{2}$ "  $\times$   $18\frac{1}{2}$ "; sectional area 2·344 sq. ft.  
Built 26th July; crushed 20th December. Age 21 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
12.2	10	·14	·06	—	Into bearing.
12.4 $\frac{1}{2}$	30	9·42	4·06	—	
12.6	45	16·38	6·98	·07"	
12.7 $\frac{1}{2}$	60	23·34	9·95	·10"	
12.7 $\frac{1}{2}$	65	25·66	10·94	—	Sounds of cracking.
12.8	70	27·98	11·93	—	Crack in bottom course.
12.8 $\frac{1}{2}$	75	30·30	12·92	·15"	Ditto continuing upwards.
—	78	31·69	13·51	—	Ditto ditto.
—	80	32·62	13·91	—	Slight dropping of cement.
12.10	85	34·94	14·90	—	Spall two courses from bottom, northern side.
12.10 $\frac{1}{2}$	90	37·26	15·89	·20"	Spalling going on.
12.11	95	39·58	16·88	·25"	Eastern side showing signs of failure.
12.12	100	41·90	17·87	—	Serious failing at bottom course.
12.13	101	42·16	18·07	—	Split from bottom and collapsed, the top for about five courses being uninjured after falling.

\* \* The cement did not give way at all; but was set all through the pier.

**Pier No. 12.—Gault Bricks from Burham, Kent, in Cement Mortar.**

6' 0 $\frac{1}{2}$ " high,  $18\frac{1}{4}$ "  $\times$   $18\frac{1}{4}$ "; sectional area 2·313 sq. ft.  
Built 29th July; crushed 20th December. Age 20·5 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
12.48	10	·14	·06	—	Into bearing.
12.50 $\frac{1}{2}$	30	9·42	4·07	—	
12.53	45	16·38	7·08	·10"	Slight internal sounds.
—	55	21·02	9·03	·15"	Ditto
12.54 $\frac{1}{2}$	65	25·66	11·09	·20"	
12.54 $\frac{1}{2}$	70	27·98	12·09	—	Corner cracking off top two courses, north-east corner.
12.55	75	30·30	13·09	·25"	Spalling near bottom, south-east corner.
12.56	78	31·69	13·70	—	Splitting at top.
—	80	32·62	14·10	·28"	Spalling at top, north-east corner.
12.57	85	34·90	15·08	—	Failing four courses up from bottom.
12.58	90	37·26	16·11	—	Increasing bulge five courses up from bottom.
12.58 $\frac{1}{4}$	95	39·58	17·11	—	Failing badly, bulging, and splitting up.
1.0	97	40·50	17·51	—	Split up along the line of closers, and collapsed.

\* \* Failure from bending stress.

There were one or two pieces of stock bricks used as closers in the heart of the pier.

the work was resumed at 10 A.M. There was some trouble with air in the ram cylinder at the commencement, but this was not noticeable after the first pier had been broken.

After crushing four of the cement piers it was decided to leave the crushing of the remaining four till Thursday, 24th December. That morning, however, turned out wet, and the crushing of the remaining specimens for the first period was deferred to and completed on the 31st December.

After the piers had been crushed, Professor Unwin crushed a couple of copper cylinders, of a standard type, and noted the amount of compression at the successive pressures, so as to ascertain the real effective force of the ram after deducting friction. An account of this is added in an appendix [p. 350].

During the experiments, Mr. W. Wonnacott kindly took photographs, for the use of

**Pier No. 13.—Leicester Red Bricks from Elliston, near Leicester, in Cement Mortar.**

6' 0" high,  $18\frac{3}{8}" \times 18\frac{3}{8}"$ ; sectional area 2·344 sq. ft.  
Built 29th July; crushed 31st December. Age 22·1 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
10.21	15	2·46	1·05	—	Brought into bearing rather suddenly.
10.33 $\frac{1}{2}$	80	32·62	13·91	—	
10.34 $\frac{1}{2}$	90	37·26	15·89	—	Internal crack heard.
10.35	100	41·90	17·87	$\frac{1}{16}"$	
10.36 $\frac{1}{2}$	130	55·82	23·81	—	Going near top, four courses cracked, and also at bottom.
10.38	160	69·74	29·75	$\frac{3}{32}"$	Cracked six courses from top.
10.39	180	79·02	33·71	$\frac{1}{8}"$	Crack continuing steadily.
10.40	200	88·30	37·67	—	Crack opening.
10.41	230	102·22	43·61	$\frac{5}{32}"$	Ditto and distinct signs of failing at top.
10.41 $\frac{1}{2}$	250	111·50	47·57	—	Ditto top six courses.
10.42 $\frac{1}{2}$	270	120·78	51·52	—	Face still parting near top.
10.43	280	125·42	53·50	$\frac{3}{16}"$	
10.44	290	130·06	55·48	—	Failing at top, six courses down on one side, and eight courses on the other, both along line of closers.
—	300	134·70	57·46	—	Failing quietly, and shut off pressure for short time.
10.47	350	157·90	67·36	$\frac{1}{4}"$	Finally failed <i>by bending</i> suddenly, and fell immediately the joints began to open markedly.

\* \* Several pieces of yellow stocks were found bedded in this pier, about four courses from bottom, as closers.

**Pier No. 14.—Leicester Red Bricks from Elliston, near Leicester, in Cement Mortar.**

6' 0" high,  $18\frac{3}{8}" \times 18\frac{3}{8}"$ ; sectional area 2·344 sq. ft.  
Built 1st August; crushed 31st December. Age 21·7 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
11.24	10	·14	·06	—	Into bearing.
11.32	30	9·42	4·00	—	
11.34	45	16·38	6·98	—	
11.38	90	37·26	15·89	—	Crack in bottom course.
11.38 $\frac{1}{2}$	120	51·18	21·82	—	Spalling, bottom course.
11.39	130	55·82	23·81	$\frac{1}{8}"$	Two bottom courses crushing.
11.40	150	65·10	27·77	—	Crack from bottom upwards through four courses.
11.40 $\frac{3}{4}$	170	74·38	31·73	—	Splitting at bottom.
11.41 $\frac{1}{2}$	190	83·66	35·68	$\frac{1}{16}"$	
11.42	210	92·94	39·65	—	Crack from bottom upwards through nine courses.
11.43	230	102·22	43·61	—	Ditto ditto ten courses.
11.44	240	106·86	45·58	—	Crack opening out, and corner coming off (photograph taken).
11.44 $\frac{1}{2}$	250	111·50	47·57	$\frac{5}{16}"$	Corner fell away.
11.45	260	116·14	49·54	$\frac{3}{8}"$	Failed entirely. Nine courses at bottom completely crushed.

\* \* Many pieces of stock, blue, and gault bricks used as internal closers and filling all through; mostly fragments of stocks. The cement was set and hard.



the Institute, of the piers under stress and when crushed; Mr. T. H. Howe also took a set for Mr. Donaldson, while Mr. Garbutt made a series of sketches showing the mode of failure. A selection of these illustrations is given [pp. 335, 337, 339, 346], as affording typical examples, and Mr. Garbutt has favoured us with a short Paper, which follows this, descriptive of his observations.

This finishes the record of the first series of experiments, and while in some cases the results obtained have been unsatisfactory, it is believed that some of the information gained is quite new, and may be of great advantage to the profession. Six fresh piers to replace faulty ones have been built, and will be crushed at the end of four months, in order to give a complete and reliable estimate of the respective strengths for that period. It is, however, to the tests at the end of ten months that the committee attach the most importance, as giving the strength of brickwork when the mortar is more mature.

We owe a debt of gratitude to Professor Unwin for the interest he has taken in the general direction of our proceedings; also to Sir William Arrol and Mr. Tuit, and to Mr. Donaldson. Without the help of these gentlemen the experiments would have been impossible.

**Pier No. 15.—Staffordshire Blue Bricks, from Rowley Regis, in Cement Mortar, Wire Cuts, no Frogs.**

6' 0" high,  $13\frac{1}{2}" \times 13\frac{1}{2}"$ ; sectional area 1·265 sq. ft.  
Built 1st August; crushed 31st December. Age 21·7 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
12.25	10	·14	·11	—	Bearing tight before starting.
12.28 $\frac{1}{2}$	70	27·98	22·12	—	Sounds of cracking heard.
12.29 $\frac{1}{2}$	90	37·26	29·45	—	Cracking top three courses.
12.30	110	46·54	36·79	$\frac{3}{16}"$	Cracking top five courses.
12.30 $\frac{1}{2}$	120	51·18	40·46	$\frac{4}{16}"$	
12.31	130	55·82	44·12	$\frac{5}{16}"$	Cracking at bottom.
12.32	160	69·74	55·13	—	Ditto five courses.
12.32 $\frac{1}{2}$	180	79·02	62·46	$\frac{3}{16}"$	Two cracks at bottom, six courses up.
12.33	200	88·30	69·80	$\frac{7}{16}"$	Crack, ten courses down from top.
12.33 $\frac{1}{2}$	210	92·94	73·47	—	Crack opening top and bottom.
—	220	97·58	77·13	$\frac{1}{2}"$	Pier splitting up.
12.34	230	102·22	80·80	$\frac{9}{16}"$	
12.35	240	106·86	84·47	$\frac{11}{16}"$	

Crack well opened, and pier broke entirely into a heap of rubbish. Not a whole brick could be found. Cement was still damp.

**Pier No. 16.—Staffordshire Blue Bricks, from Rowley Regis, in Cement Mortar.**

6' 0" high,  $17\frac{7}{8}" \times 17\frac{3}{4}"$ ; sectional area 2·203 sq. ft.  
Built 25th July; crushed 31st December. Age 22·7 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of pier in tons	Compression in inches	Notes
1.5	11	·60	·22	—	Into bearing.
1.8	50	18·70	8·48	—	Sounds of internal cracking.
1.8 $\frac{1}{2}$	70	27·98	12·70	—	Sounds of cracking.
1.9	90	37·26	16·91	—	
1.9 $\frac{1}{2}$	100	41·90	19·01	$\frac{3}{16}"$	Ditto
—	130	55·82	25·33	$\frac{4}{16}"$	Loud sound of cracking.
—	150	65·10	29·55	$\frac{5}{16}"$	
1.11	170	74·38	33·76	—	Top course cracked.
—	180	79·02	35·86	$\frac{3}{16}"$	Cracking at line of closers.
1.12	220	97·58	44·29	$\frac{1}{2}"$	Cracking at centre, mortar squeezing out.
—	240	106·86	48·50	$\frac{11}{16}"$	Cracks all over.
1.13 $\frac{1}{2}$	280	125·42	56·93	—	Cracks opening near top.
—	300	134·70	61·14	—	Split well down, particularly at closers, and collapsed.

\* In this pier, stock brick was used generally for internal closers, giving appearance of a yellow core to pier.

## Comparative Statement of Results.

Description of Brick				Age	Commencement of failure	Final collapse
No. of pier				Weeks	Tons per sq. ft.	Tons per sq. ft.
*1. London Stocks in mortar (with a frog)	.	.	.	17·7	—	—
2. Ditto ditto ditto	.	.	.	18·3	4·18	10·41
3. Gault ditto (without frogs)	.	.	.	18·3	5·00	21·32
4. Ditto ditto ditto	.	.	.	18·8	6·16	22·03
5. Leicester Red ditto ditto	.	.	.	19·1	15·20	29·93
6. Ditto ditto ditto	.	.	.	18·6	16·11	31·55
7. Staffordshire Blue ditto ditto	.	.	.	18·6	22·43	69·22
8. Ditto ditto ditto	.	.	.	19·4	21·42	79·39
9. London Stocks in cement (with a frog)	.	.	.	21·1	7·22	16·03
10. Ditto ditto ditto	.	.	.	21·0	5·72	13·83
*11. Gault ditto (without frogs)	.	.	.	21·0	6·98	17·98
*12. Ditto ditto ditto	.	.	.	20·5	7·08	17·51
13. Leicester Red ditto ditto	.	.	.	22·1	17·87	67·36
*14. Ditto ditto ditto	.	.	.	21·7	21·82	49·54
*15. Staffordshire Blue ditto ditto	.	.	.	21·7	29·45	84·47
*16. Ditto ditto ditto	.	.	.	22·7	16·91	61·14

Duplicates of the piers marked \* have been built, and will be tested for the four months' period.

The average strength of the bricks used in building the above piers, as ascertained by Professor Unwin by his tests at the Central Technical College, is as follows :—

Crushing strength in tons per sq. ft.				Crushing strength in tons per sq. ft.			
London Stocks	.	.	.	84·27	Leicester Red	.	382·1
Gault	.	.	.	182·2	Staffordshire Blue	.	701·1

## NOTES OF THE BEHAVIOUR, WHILE UNDER COMPRESSION, OF THE FIRST SERIES OF BRICKWORK PIERS. By MATT. GARBUTT [A.].

The Science Standing Committee have honoured me with a request to prepare a brief statement descriptive of the diagrams [fig. 13] I have prepared illustrating the way in which the collapse of the piers took place, and which are based upon observations and rough sketches made by myself on the spot, and afterwards carefully compared with the photographic evidences available.

The observed effects of pressure were similar in most cases, but varied in degree with the different materials. Generally the first evidences of strain were slight internal crackling sounds, audible only on applying the ear to the brickwork. Then the mortar squeezed out of the joints and fell off—this occurring to a greater extent with the harder bricks, and being more marked where lime mortar was used than with cement. This was accompanied or followed by cracks occurring in single bricks which, from slightly irregular bedding, or other cause, were unevenly stressed, and by the spalling off of small corners or pieces of the face for similar reasons. By this time the joints were generally noticeably compressed, and serious cracks, indicating final lines of rupture, appeared. The piers at this point generally bulged outwards, slowly at first, and then, the resistance of the brickwork ceasing, the falling of the pressure gauge gave warning that actual collapse was imminent. In the case of the harder bricks set in cement the final failure was much more sudden than in the others, so much so that some agility was necessary on the part of the man who, to measure its compression, stood close to the pier. It will be desirable, before carrying out the proposed 9-month tests, to devise an instrument for measuring, without undue risk to the observer, the actual shortening of the piers during testing.

From the beginning of the tests all through the series it was evident that the vertical line of joints formed by the closers was a plane of weakness, and it was generally at this line that the serious cracks first showed themselves. The majority of the piers broke by crushing in the normal way, or in a manner closely approximating thereto. The pier No. 3, of Gault Bricks in mortar, presented a good typical example. It bulged evenly and on all sides at once, nearly every brick in the body of the pier was broken, and the two pyramids at top and bottom remaining after the crushing of the mass were regularly defined and approximately concentric with the axis of the pier.



There were, however, one or two departures from the type of fracture generally to be expected in short piers. Of these exceptional cases No. 12 was the most remarkable. This pier was of Gault Bricks in cement, and it appeared that, from some cause not readily to be detected, the stresses were not evenly distributed over the whole area of the pier. The first visible signs of injury were spallings

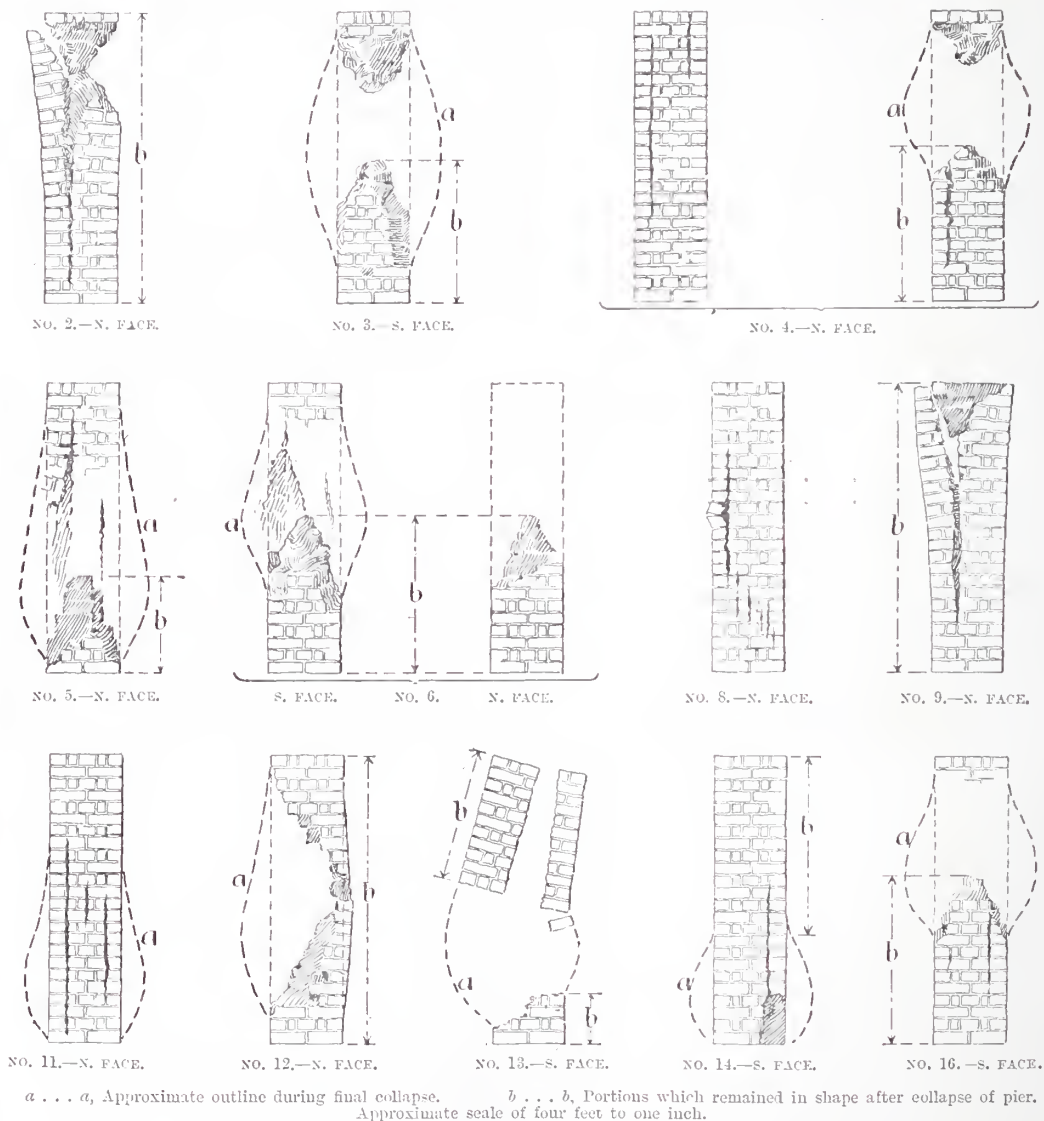


FIG. 13.—DIAGRAMS SHOWING WAYS IN WHICH PIERS FAILED.

Reproduced from drawings by Mr. Matt. Garbutt [4].

of the bricks on one side of the pier; then splitting occurred at the lines of closers on the adjacent sides, and finally the side which first showed injury crushed and the pier failed by bending. The cement was found to be quite disintegrated, and as the corresponding pier, No. 11, which was subjected to almost exactly the same pressure, showed its cement to be perfectly hard, set, and uninjured by crushing, one is led to conjecture that the cement used in No. 12 had been left mixed overnight and beaten up again

in the morning, or that the bricks had not been sufficiently wetted, and had withdrawn the moisture from the cement.

*Pier No. 2*, of London Stocks in Mortar, split down at the line of closers, only the extreme bottom course being unbroken, and crushed at the top, two pyramids being formed with their apices in contact about five courses from the top of the pier. The mortar was not fully set.

*Pier No. 4*, of Gault Bricks in Mortar, gave way somewhat similarly to No. 2, by crushing near the top.

*Pier No. 5*, of Leicestershire Red Bricks in Mortar, failed from the bottom, giving way very steadily, and bulging evenly all round.

*Pier No. 6* was of the same materials as No. 5, but failed in a somewhat different manner, displaying a diagonal crack on one side indicative of a tendency to fail by sliding; but this did not extend right through the pier, all the serious splits upon the other faces being vertical at the lines of the closers, and the failure was chiefly due to crushing. A photograph was secured showing the diagonal crack, and is of interest as illustrating the only example of the kind which was observed in the sixteen piers tested.

*Pier No. 7*, of Staffordshire Blue Bricks in Mortar.—The behaviour of this pier under compression was in several ways different from that of any of the other piers built in mortar, because of the disproportion between the strength of the mortar and that of the bricks used. Until the pressure reached 16 tons per square foot there was no sign of any injury to the pier, but at this point the mortar began to show signs of distress and internal cracking sounds became audible. No visible cracks occurred, however, until 28 tons per square foot had been applied, at which time the pier had been compressed half an inch. When pressure had risen to 45 tons the joints of the pier crushed suddenly and considerably, and from this time until complete failure occurred mortar was falling freely from the joints. The final crushing was at the centre of the pier, and occurred just before 70 tons per square foot was reached.

*Pier No. 8*.—This was a Staffordshire Blue Brick pier in mortar, like the last; and here again the relative weakness of the mortar became evident, the pier being shortened one inch by crushing of its joints under a pressure of 59 tons per square foot. The weakness caused by the closers was marked here by the bursting off of strips  $4\frac{1}{2}$  inches square and about 2 feet long from the angles at the centre of the height of the pier: this was quickly succeeded by the final collapse.

*Pier No. 9*, of Stock Bricks in Cement.—The way in which this pier failed was very curiously like the way in which No. 2—of the same bricks, but set in mortar—failed. It split from top to bottom near the centre, but, instead of having two opposing pyramids, it had one which appeared to act as a wedge tending to assist the splitting process.

*Pier No. 11*, of Gault Bricks in Cement, failed by crushing near the bottom, the worst cracks first appearing at the line of closers. The cement, as previously mentioned, was set and hard, and did not give way appreciably: this to a great extent prevented the crushing of the bricks, which were much less shattered than in the mortar-built piers.

*Pier No. 13*, of Leicestershire Red Bricks in Cement, displayed a combination of crushing and bending. Under a pressure of 26 tons per square foot, it had been compressed rather more than  $\frac{1}{16}$  inch, and then it began to crack near the top, the crack (which was at the line of closers) steadily continuing and opening until the pressure reached 67 tons per square foot, when the pier suddenly bent and fell, a considerable mass of the upper portion remaining intact after its fall.

*Pier No. 14*, of Leicestershire Red Bricks in Cement.—The chief noticeable feature about this pier was that although it seemed an almost exact duplicate (as was intended) of No. 13, and the cement was thoroughly and properly set, yet it proved to have only three-fourths of the strength of No. 13. This pier was badly built, the core being filled with fragments of London Stocks. Its failure, which occurred near the bottom, was normal.

*Pier No. 15*, of Staffordshire Blue Bricks in Cement.—This pier was only  $13\frac{1}{2}$  inches square, being built of this size because it had been suggested that the machine employed might be unable to crush the 18-inch square pier of blue bricks in cement. It proved fully 25 per cent. stronger in proportion to its area than the 18-inch pier, the difference being probably due to the better bond and absence of



closers. It failed entirely by crushing, and was so completely destroyed that I could find only one whole brick remaining. The cement was still damp.

## THE FIRST SERIES OF BRICKWORK TESTS: REPORTS AND NOTES.

By PROFESSOR UNWIN [*H.A.*], B.Sc., F.R.S.

### I.—REPORT ON CRUSHING TESTS OF SAMPLES OF BRICKS USED.

Date of test	Description	Dimensions in inches	Area crushed in square feet	Loads in tons		Stresses in tons per square foot		Mean crushing strength in tons per square foot
				Cracking	Crushing	Cracking	Crushing	
1895								
Oct. 3	London Stocks . . . .	9.05 × 4.25 × 2.65	.267	22.38	25.265	83.8	94.6	84.27
Oct. 3	Ditto . . . .	9.10 × 4.10 × 2.7	.259	—	23.10	—	89.15	
Oct. 23	Ditto . . . .	8.8 × 4.05 × 2.6	.247	21.3	22.91	86.06	92.56	
Oct. 24	Ditto . . . .	9.1 × 4.3 × 2.75	.272	16.0	16.51	58.88	60.76	
Oct. 3	Gault . . . .	8.7 × 4.2 × 2.7	.254	—	45.55	—	179.5	182.2
Oct. 3	Ditto . . . .	8.8 × 4.15 × 2.7	.254	22.5	50.12	88.7	197.6	
Oct. 23	Ditto . . . .	8.8 × 4.2 × 2.8	.257	29.0	42.83	113.0	166.9	
Oct. 23	Ditto . . . .	8.9 × 4.3 × 2.8	.266	28.0	49.155	105.3	184.9	
Oct. 3	Leicester Red (half brick) .	4.3 × 4.07 × 2.7	.121	43.655	71.855	359.3	591.4	382.1
Oct. 3	Ditto . . . .	4.3 × 4.3 × 2.8	.128	—	39.99	—	311.4	
Oct. 23	Ditto . . . .	4.6 × 4.35 × 2.75	.139	28.6	43.41	201.5	312.3	
Oct. 23	Ditto . . . .	4.5 × 4.25 × 2.75	.133	25.0	43.30	188.3	326.0	
Oct. 24	Ditto . . . .	4.4 × 4.3 × 2.8	.131	32.0	48.515	243.5	369.2	
Oct. 3	Blue Stafford (half brick) .	4.4 × 4.25 × 2.7	.130	44.50	100.0*	342.5	770*	701.1
Oct. 10	Ditto . . . .	3.0 × 4.25 × 2.7	.088	—	50.0	—	564.8	
Oct. 10	Ditto . . . .	4.3 × 4.1 × 2.75	.122	62.27	70.375	509.5	575.8	
Oct. 23	Ditto . . . .	4.15 × 4.3 × 2.75	.124	50	100.0*	403.5	807*	
Oct. 23	Ditto . . . .	4.3 × 4.25 × 2.75	.127	80	100.0	631	788	

\* These specimens were *not* crushed with 100.0 tons.

### II.—REPORT ON CRUSHING TESTS OF SAMPLES OF BRICKS AND HALF-BRICKS USED.

Some of the bricks used in building the piers were so strong that they could not be crushed as whole bricks in the 100-ton testing machine. They were therefore cut in half and tested as half-bricks.

It is well known that the pressure at which solid prisms crush, reckoned per unit of area of the surface supporting the pressure, varies with the form and proportions of the prism. In particular, the crushing pressure diminishes as the ratio of the height to the horizontal dimensions increases. It is not likely, therefore, that a half-brick will carry exactly half the load that a whole brick will carry.

It seemed desirable to obtain a measure of the relative resistance of whole and half-bricks. Three qualities of brick were selected and prepared for testing, both as whole and half-bricks, with the usual plaster facing to secure parallel plane surfaces to support the crushing pressure.

The following table gives the results of the tests:—

Description	Dimensions in inches	Area crushed in square feet	Loads in tons		Stresses in tons per square foot		Mean crushing stress. Tons per square foot
			Cracking	Crushing	Cracking	Crushing	
London Stock . . . .	9.1 × 4.3 × 2.8	.272	—	25.26	—	92.85	92.85
Ditto (half-brick) . .	4.7 × 4.4 × 2.8	.144	—	6.845	—	47.54	46.94
Ditto (half-brick) . .	4.6 × 4.3 × 2.8	.137	—	6.350	—	46.35	
Red Rubber . . . .	9.9 × 4.9 × 3.4	.337	18.135	28.35	53.80	84.11	84.11
Ditto (half-brick) . .	4.9 × 4.8 × 3.3	.163	—	9.695	—	59.48	58.71
Ditto (half-brick) . .	5.0 × 4.8 × 3.3	.167	—	9.675	—	57.94	
Gault . . . .	8.9 × 4.1 × 2.8	.253	45.465	48.64	179.7	192.2	192.2
Ditto (half-brick) . .	4.4 × 4.2 × 2.8	.128	17.88	22.575	139.7	176.4	160.7
Ditto (half-brick) . .	4.7 × 4.3 × 2.8	.140	16.98	20.29	121.3	145.0	

It appears that the half-bricks are very markedly weaker than the whole bricks. The following statement gives the results on half-bricks expressed as a percentage of the strength of whole bricks:—

Description	Strength of whole bricks per square foot	Strength of half-bricks per square foot
London Stocks	100	50
Red Rubbers	100	70
Gault	100	83

The London Stocks are of very rough composition and cannot be divided very neatly. They are also very irregular in strength. Excluding them, it would appear that bricks tested as half-bricks may be expected to crush with about 25 per cent. less pressure per square foot than the same bricks tested as whole bricks.

### III.—REPORT ON TESTS OF LIME AND CEMENT USED IN THE CONSTRUCTION OF THE EXPERIMENTAL PIERS AT THE WEST INDIA DOCKS.

By arrangement, parcels of lime and cement, as used at the West India Docks, and also a small quantity of the sand used there, were forwarded to the Central Technical College. The quantity of sand was not sufficient for making more than a few briquettes, and therefore it was decided to use for most of the briquettes the standard washed and sifted sand which has been generally adopted for cement tests, and which is obtained from Leighton Buzzard. A few briquettes were made with the sand used in building the piers, and this is referred to below as special sand. A number of compression briquettes, cubes of 3 inches length of side, were carefully made, and when removed from the moulds were placed under water to harden. The results of the first tests of these are given in the following tables. A reserve of briquettes has been retained for testing at later dates :—

#### Lime Briquettes.—Composed of two of sand to one of lime by volume.

No. of specimen	Description	Date of making 1895	Date of testing 1895	Age, Weeks	Dimensions in inches		Area in square feet	Breaking load in tons	Crushing stress, Tons per square foot
					Crushed section	Height			
L. 1	Standard sand	October 4	October 31	4	3·00 × 3·00	2·99	0·0625	0·344	5·50
L. 2	Ditto	October 4	October 31	4	3·00 × 3·00	3·02	0·0625	0·416	6·66
L. 6	Ditto	October 7	January 7	13·1	3·00 × 3·05	3·00	0·0635	0·515	8·11
L. 7	Ditto	October 28	January 15	11·3	3·00 × 3·00	3·01	0·0625	0·585	9·36
L. 3	Ditto	October 4	March 20	24	3·00 × 3·00	2·99	0·0625	0·946	15·14
L. 4	Ditto	October 7	March 20	23·6	3·00 × 3·00	2·97	0·0625	0·961	15·38
L. 5	Ditto	October 7	March 20	23·6	3·00 × 3·00	3·01	0·0625	1·041	16·65

Strength at 4 weeks, 6·08 tons per sq. ft.  
Ditto 12 weeks, 8·73 ditto.  
Ditto 24 weeks, 15·72 ditto.

#### Cement Briquettes. - Composed of four of sand to one of cement by volume.

No. of specimen	Description	Date of making 1895	Date of testing 1895	Age, Weeks	Dimensions in inches		Area in square feet	Breaking load in tons	Crushing stress, Tons per square foot
					Crushed section	Height			
1	Standard sand	October 2	October 31	4	2·99 × 3·02	3·06	0·0627	2·196	35·03
3	Ditto	October 2	October 31	4	3·00 × 3·00	3·03	0·0625	1·741	27·86
7	Ditto	October 3	January 7	13·7	3·00 × 3·00	3·02	0·0625	2·670	42·71
11	Ditto	October 3	January 7	13·7	3·00 × 3·03	3·00	0·0631	3·428	54·32
4	Ditto	October 2	March 19	24	3·00 × 3·02	3·00	0·0629	3·085	49·04
5	Ditto	October 2	March 19	24	3·00 × 3·01	3·00	0·0627	3·790	60·44
8	Ditto	October 3	March 19	24	3·02 × 3·00	3·00	0·0629	3·710	58·97
2	Special sand	October 2	March 19	24	3·01 × 3·02	2·99	0·0631	2·152	34·11
6	Ditto	October 2	March 19	24	2·98 × 3·00	3·00	0·0621	1·484	23·90

Mean strength at 4 weeks, 31·45 tons per sq. ft.  
Ditto 13·7 weeks, 48·52 ditto.  
Ditto 24 weeks, 56·15 ditto.

Mean strength of briquettes made with same sand as that used in building the piers  
= 29·00 tons per sq. ft. at 24 weeks.

### IV.—DETERMINATION OF THE LOADS CORRESPONDING TO THE GAUGE PRESSURES FOR THE LARGE HYDRAULIC PRESS AT THE WEST INDIA DOCK.

The hydraulic press has a ram 3 ft. 1½ in. in diameter, or of 1,130 sq. in. area. Hence, if there





## JOURNAL

OF

## THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

VOL. III. THIRD SERIES

No. 11

1896 APRIL 1896

THE TWELFTH GENERAL MEETING (ORDINARY) of the Session will be held on Monday, the 20th April 1896, when the Chair will be taken at EIGHT O'CLOCK P.M. precisely, for the following purposes:—

To read the Minutes of the Ordinary General Meeting held on Monday, the 30th March 1896; to formally admit members attending for the first time since their election, &c.

To read (under the management of the Art Standing Committee) Papers on

## THE ARCHITECT'S USE OF COLOUR.

By HALSEY R. RICARDO, Architect, and CHRISTOPHER WHALL, Painter.

SYNOPSIS.—I. Colour in, our crowded towns the Main Resource of the Architect. The Convenience, Distinction, and Comfort of Colour. Materials available. Examples of Colour Decoration past and present.—II. The Architect's Use of Colour as employed in Decoration and founded on Nature. A Painter's Criticism of some points of Architectural Methods, and Suggestions for their Modification. Some Practical Expedients and Experiments.

\* \* \* Examples of various Coloured Building Materials will be exhibited at the Meeting.

Applications for admission to candidature and for election at the Business Meeting to be held on the 8th June 1896 must be delivered to "The Secretary R.I.B.A." on or before Saturday, the 18th inst.

## EXPERIMENTAL RESEARCH.

## SOUND IN ITS RELATION TO BUILDINGS.

[See JOURNAL, current number, p. 361.]

The Science Standing Committee, acting on a suggestion made when the question of Sound in its relation to Buildings was under discussion last Session, are instituting a series of inquiries with a view to collect and record fuller information on this somewhat neglected subject. The lines on which the inquiries are based are indicated in the Schedule of questions printed below, and it is suggested that members, whether residing at home or abroad, might facilitate the work by undertaking to study at least one important building in their locality, and reporting their observations to the Hon. Secretaries of the Science Committee at the Institute, 9, Conduit Street, London, W.

1. **Plan.**—Give a general plan, with elevations and sections, of the *interior* of the building.

2. **Materials.**—Describe the materials of which the building is constructed, carefully noting the finish of the interior surfaces and the disposition of carpets, hangings, or other similar fabrics.

3. **Construction.**—The construction of the building should be described as fully as possible.

4. **Seating.**—Illustrate the method of seating by plan and section.

5. **Speakers, &c.**—Show position of speakers or musicians in relation to the audience.

6. **Effect of Audience.**—The effect of an audience should be carefully noted. State if the room is better when partially or entirely filled.

7. **Ventilation.**—Describe in some detail the system of ventilation. If possible, note the mean and extreme temperatures and the effect of the variation produced



by it and by changes in direction of the ventilation. State the position in which the thermometers are placed. (For full explanation as to the value of these observations, see "Sound in its Relation to Buildings," JOURNAL, Vol. II. Third Series, p. 353.)

**8. Keynote.**—If the keynote of the building is known, state it, and say whether or not, if the voice is pitched in this key, any improvement in sound is noticeable.

**9. Quality of Sound.**—(a) State what is the general reputation of the building for (1) Music; (2) Speaking.

(b) State what the quality of the sound is—full and resonant, &c., and note any peculiarity of effect, such as echoes and the like.

(c) If defective, state the nature of the defect as carefully as possible.

**10. Remedies.**—If remedies have been tried to obviate defects, state them, and the result obtained. The precise nature of the remedy should be fully detailed.

**11. Additional Particulars.**—Add any particulars not above scheduled which may be considered necessary or desirable, and state age of building.

**12. References.**—Give references (if any) to published descriptions of the building, especially those dealing with its acoustic properties.

**13. Authority.**—Give the names of the experimenters and date of experiments.

*NOTE.*—For purposes of classification it is requested that answers to each of the foregoing questions be written on separate sheets of paper, headed with the name of the building experimented upon, and the subjects treated.

## CONTENTS OF THE JOURNAL.

VOL. III. THIRD SERIES. NO. 11. 2 APRIL 1896.

Brickwork Tests: Report on the First Series of Experiments, with tabulated Table of Results [Wm. C. Street and Max. Clarke].—Notes on the Behaviour, while under Compression, of the First Series of Brickwork Piers [Matt. Garbutt].—Reports and Notes by Professor Unwin, F.R.S.: I., II.<sup>a</sup> and III. Reports on Crushing Tests of Samples of Bricks, Half-bricks, and Lime and Cement used in the Experiments; IV. Determination of the Loads corresponding to the Gauge Pressures for the large Hydraulic Press at the West India Dock; V. American Tests of Brick Piers in Lime and Cement Mortar.—Analyses of Mortar and Cement Mortar [W. J. Dibdin, F.I.C., F.C.S.—Description of the

Hydraulic Testing-machine [J. E. Tuit, M.Inst.C.E.].—Discussion . . . . . 333-358  
Chronicle.—The Midsummer Examinations; The Final Examination: a new Prize.—Mr. Penrose and the Parthenon; The late Emile Boeswillwald; The Great Work on St. Mark's, Venice . 359-361  
Notes, Queries, and Replies.—Sound in its relation to Buildings: Proposed Experimental Research; Appeal for Funds.—Mr. Phenè Spiers's Paper: Saint-Front of Périgueux [A. Choisy and Professor Baldwin Brown]; The Domes of Aquitaine [John S. Quilter]; The Mysterious Wreck at Nemi [John Hebb] . . . . . 361-364  
Minutes. XI. 30 March 1896 . . . . . 364  
Legal.—Sky Signs . . . . . 364

## MEETING AND DINNER AT MANCHESTER, 20th MAY.

Arrangements are in progress for holding a Meeting, to be followed by a Dinner, at Manchester on Wednesday, the 20th of May. The Meeting will be held in the rooms of the Manchester Society at 3 o'clock in the afternoon, and the Dinner will take place in the evening.

Members of the Royal Institute and of Societies allied to the Institute desirous of taking part in the function are requested to send their names to "The Secretary R.I.B.A." as soon as possible. The price of Dinner Tickets (inclusive) has been fixed as follows:—Members of the Institute and of the Allied Societies, 25s.; Their Guests, 30s.

WILLIAM H. WHITE,

*The Secretary of the Royal Institute.*

NO. 9, CONDUIT STREET, HANOVER SQUARE, LONDON, W.

friction. The difference of the load calculated from the ram area and pressure and that calculated by formula (a) is the friction and unbalanced weight of the press:—

Comparison of Gauge Pressures, calculated Loads neglecting Friction, and true effective Loads of Ram, at West India Dock.

Observed gauge pressure. Pounds per square inch	Calculated load on ram neglecting friction, &c., in tons	Effective loads from compression of cylinders		Mean effective load of ram in tons from plotted curve	Load calculated by formula (a) in tons	Friction of ram in tons
		Cylinder 1683 in tons	Cylinder 1688 in tons			
10	5.04	—	—	—	0.14	4.90
15	7.57	2.50	—	2.50	2.46	5.11
20	10.09	4.70	—	4.70	4.78	5.31
30	15.13	7.60	—	7.60	9.42	5.71
40	20.18	14.00	—	14.00	14.06	6.12
50	25.22	19.24	19.10	19.17	18.70	6.52
60	30.26	24.38	23.48	23.93	23.34	6.92
70	35.31	—	28.15	28.15	27.98	7.33
80	40.35	33.80	33.09	33.44	32.62	7.73
90	45.40	—	37.40	37.40	37.26	8.14
100	50.44	—	41.73	41.73	41.90	8.54
110	55.48	—	45.82	45.82	46.54	8.94
130	65.58	—	51.80	51.80	55.82	9.76

#### V.—AMERICAN TESTS OF BRICK PIERS IN LIME AND CEMENT MORTAR.

The only series of tests hitherto made which are similar to those undertaken by the Committee is one made in the United States by a Committee of the American Society of Civil Engineers in 1887-88. The following is a short abstract of the results of these tests reduced to the same units and put in a form in which they can be easily compared with the present experiments.

The bricks used were of three kinds.

	Crushing strength. Tons per sq. ft.
Hard burned face bricks . . . . .	890
Ditto ditto common bricks . . . . .	1170
Bay State medium bricks . . . . .	730

Thirty-three brick piers were built of these bricks of various forms and sizes. The bricks were laid on the bed with joints broken in every course, except in two cases. Their ages when tested varied from fourteen to twenty-four months. The tests were made on the 500-ton testing-machine at Watertown. Piers built with Portland cement gave the highest resistance, showing that the quality of the mortar affects the strength of the pier. The piers in lime mortar compressed most, and the yielding appeared to be chiefly in the joints. The compressions were measured and are given, but it has not seemed necessary to abstract these. The following tables give the whole of the results on the crushing of piers:—

Brick Piers in Cement Mortar.

Kind of brick	Mortar	Form of pier	Nominal size in square inches	Area of section in square feet	Height in inches	No. of courses	Thickness of joints	Age in months	Crushing pressure in tons per square foot
Common	1 Portland, 2 sand . . .	Solid	16	1.56	121	49	$\frac{1}{4}$	24	121
Ditto .	Ditto . . .	Ditto	12	0.95	120	58	$\frac{1}{4}$	24	128
Face .	Ditto . . .	Ditto	12	0.91	119	51	$\frac{3}{16}$	23 $\frac{1}{2}$	144
Ditto .	Ditto . . .	Ditto	8	0.40	80	35	$\frac{1}{8}$	23	144
Ditto .	Ditto . . .	Ditto	12	0.92	23 $\frac{1}{2}$	10	$\frac{1}{8}$	18 $\frac{1}{2}$	234
Common	Ditto . . .	Ditto	16	1.77	23 $\frac{1}{2}$	13	$\frac{1}{8}$	18 $\frac{1}{2}$	Not given
Bay State	1 Rosendale, 2 lime, 6 sand	Ditto	12	1.00	73 $\frac{3}{4}$	30	$\frac{3}{16}$	20 $\frac{1}{2}$	105
Ditto .	1 Rosendale, 2 sand . . .	Ditto	12	1.00	72 $\frac{1}{2}$	30	$\frac{3}{16}$	20	126
Ditto .	1 Portland, 2 sand . . .	Ditto	12	1.00	72 $\frac{3}{4}$	29	$\frac{3}{16}$	20	115
Ditto .	1 Portland, 2 lime, 6 sand .	Ditto	12	1.00	73 $\frac{3}{4}$	30	$\frac{3}{16}$	20 $\frac{1}{2}$	91
Ditto .	Neat Portland . . .	Ditto	12	1.00	72	30	$\frac{3}{16}$	19 $\frac{1}{2}$	152



## Brick Piers in Lime Mortar (1 Lime and 3 Sand).

Kind of brick	Form of pier	Nominal size in square inches	Area of section in square feet	Height in inches	No of courses	Thickness of joints	Age in months	Crushing pressure in tons per square foot
Face . . . . .	Solid . . . . .	8	0.395	—	7	—	15	163
Common . . . . .	Ditto . . . . .	8	0.420	—	7	—	15	156
Face . . . . .	Ditto . . . . .	12	0.92	—	10	—	18½	125
Ditto . . . . .	Hollow (space 4½ × 4½)	12	0.79	—	10	—	18½	128
Common . . . . .	Solid . . . . .	12	0.96	—	10	—	18½	138
Ditto . . . . .	Hollow (space 4½ × 4½)	12	0.83	—	10	—	18½	131
Bay State . . . . .	Solid . . . . .	12	1.01	—	10	—	18½	88
Ditto . . . . .	Ditto . . . . .	12	1.00	72½	30	3/16	19½	73
Ditto . . . . .	Ditto . . . . .	12	1.00	72¼	30	3/16	20	85
Ditto . . . . .	Ditto . . . . .	12	1.08	73	19 (on edge)	3/16	20	78
Face . . . . .	Ditto . . . . .	8	0.40	80	35	3/16	23	120
Bay State . . . . .	Ditto . . . . .	12	1.00	94½	39	3/16	23½	75
Ditto . . . . .	Ditto . . . . .	12	1.00	119½	49	3/16	23½	59
Common . . . . .	Hollow (space 4¾ × 4¾)	12	0.80	120½	50	1/4	24	101
Ditto . . . . .	Solid . . . . .	12	0.96	117	49	1/4	24	76
Face . . . . .	Ditto . . . . .	12	0.92	119½	52	1/8 to 3/16	24	97
Ditto . . . . .	Hollow (space 4¼ × 4¼)	12	0.80	119½	52	1/8 to 3/16	24	115
Bay State . . . . .	Solid . . . . .	12 × 16	1.33	120½	49	1/8 to 3/16	24	50
Ditto . . . . .	Ditto . . . . .	8 × 12	0.66	120¼	49	1/4	24	60

## ANALYSES OF SAMPLES OF MORTAR AND CEMENT MORTAR.

By W. J. DIBDIN, F.I.C., F.C.S.

At the request of Mr. Blashill, an analysis of samples of mortar taken from the débris of the piers experimented upon was made by Mr. Dibdin, Chemist to the London County Council, with the following results:—

	Pier No. 4. Gault Brick. 17th Dec. 1895	Pier No. 5. Leicester Wire. 17th Dec. 1895	Pier No. 7. Blue Stafford. 17th Dec. 1895	Pier No. 9. Stocks in cement crushed at 44 tons. 20th Dec. 1895	Pier No. 11. Gault Brick in cement crushed at 50½ tons. 20th Dec. 1895	Pier No. 13. Leicester Wire cut red, 175 tons on 18 piers. 31st Dec. 1895	Pier No. 15. Blue Stafford Brick, 120 tons on 14 piers. 31st Dec. 1895	Pier No. 16. Stafford Blue Brick, 150 tons on 18 piers. 31st Dec. 1895
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Moisture . . . . .	7.69	6.92	9.88	4.95	3.94	5.72	6.16	8.26
Lime (CaO) . . . . .	13.79	12.18	10.66	11.80	10.87	11.97	9.20	11.24
„ carbonate . . . . .	1.02	1.36	1.06	2.86	2.86	1.04	1.87	1.45
„ sulphate . . . . .	0.17	0.51	0.17	0.20	0.30	0.99	0.84	0.71
Iron and alumina . . . . .	2.05	2.80	2.65	4.35	3.75	4.00	4.95	4.00
Soluble silica . . . . .	0.90	1.00	0.58	3.25	2.50	3.25	2.00	2.25
Earthy matter . . . . .	0.14	0.74	0.81	0.61	0.64	0.96	0.85	0.70
Loss on ignition . . . . .	1.74	1.07	1.69	2.09	2.19	2.42	2.50	2.02
Water of hydration, &c. . . . .	2.85	2.11	2.03	2.55	2.18	2.00	1.10	1.42
Sand and grit . . . . .	69.65	71.31	70.47	67.34	70.77	67.65	70.53	67.95
Total . . . . .	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

## DESCRIPTION OF THE HYDRAULIC TESTING-MACHINE.

By J. E. TURR, M.Inst.C.E.

The machine used in making the experiments was designed especially for the purpose, and consisted of steel box girders, connected together by angle bars, as shown in the diagram, fig. 15. An hydraulic press, having a ram 3 feet 1¾ inch diameter, rested upon the lower of the box girders, sufficient head-room being allowed above it to permit the piers being brought into position directly over the centre of the press.

The upper part of the ram being provided with a cup and ball bearing insured that the line of pressure always coincided with the longitudinal axis of the pier which was being tested.

The hydraulic pressure was obtained from the Dock Company's mains, but, as this did not exceed 750 lb. per square inch, additional means were provided for increasing it by means of small hand-pumps placed near the press.

The actual water-pressure at any moment was shown by means of two hydraulic gauges—one registering pressures up to 250 lb. per square inch, and the other to 2,500 lb. per square inch. Correction was made for the friction of the ram as described above by Professor Unwin.

The whole of the steelwork of the machine was so proportioned that a pressure of 500 tons could be safely exerted on any specimen, this corresponding to a water pressure of about 1,000 lb. per square inch, taking the effective area of the ram as 1,130 square inches.

Great care was exercised in allowing the pressure to enter the press very gradually, and, owing to the small inlet provided and the large area of the cylinder, the vertical motion of the ram was very slow.

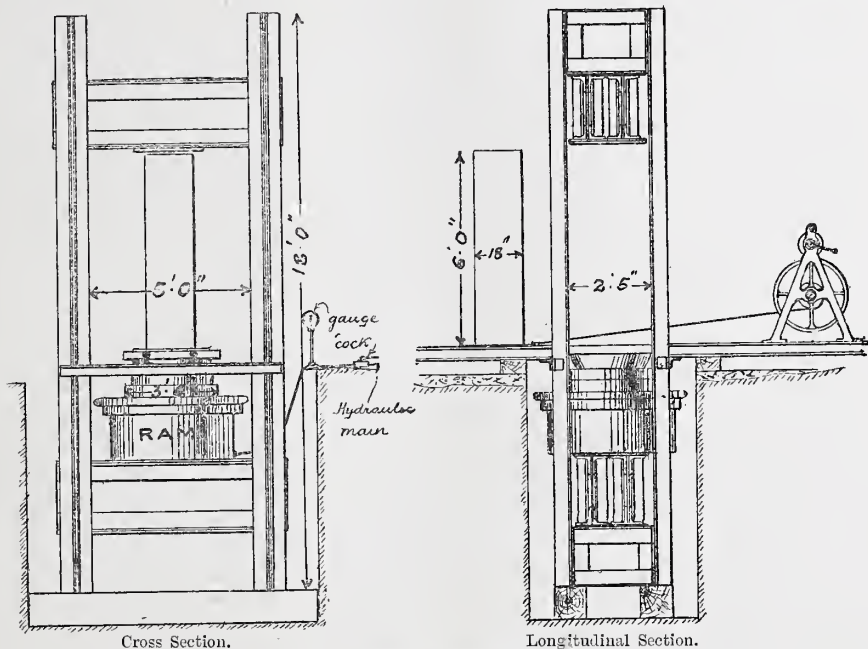


FIG. 15.—THE TESTING-MACHINE.

## DISCUSSION OF THE FOREGOING PAPERS.

Mr. ALEX. GRAHAM, F.S.A., *Vice-President*, in the Chair.

PROFESSOR UNWIN [H.A.], F.R.S.—Mr. Chairman, before touching on some tests left to me to explain, I should like to make a few introductory remarks. If you exclude soft bricks, if you take bricks such as would be used in a case where strength is necessary, single bricks will carry from 200 to 1,000 tons or more per square foot. Now, according to the best of my knowledge of the limits of working stress which have been allowed in brickwork, in cases where brickwork is required to carry a heavy load, the limits which are prescribed are something like this: For bricks in lime mortar, not more than from two to four tons per square foot; for bricks in cement mortar, not more than from four to seven tons per square foot; and for specially selected hard bricks in cement mortar, where very great strength is required, from seven to eight tons per square foot. Obviously, without any further knowledge, you can see that, allowing even for loss of strength at the joints, the ratio of working stress to the probable breaking or crushing strength of the brickwork is a very small one—much smaller than in most structures with which the engineer has to do. An

iron or steel bridge is loaded up to about one-fourth, or at any rate one-fifth, of its probable breaking weight. A boiler which is subjected to corrosion and other causes of deterioration is loaded to one-sixth or one-seventh of the pressure which would burst it, but the factor between the working load and the breaking strain in cases of brickwork must be something much more like 20 to 1—a very large factor indeed. No doubt the reason of that in part is, that a brickwork structure is a heterogeneous structure, and not a homogeneous structure, and we have to allow something for planes of weakness at the joints; but I imagine that the large factor between the working stress and the breaking stress is to a great extent an expression of our ignorance of the real strength of the brickwork; and it is to supply in some measure data as to the real strength of brickwork that this series of experiments has been undertaken; and, unless I mistake, when they are complete they will afford the largest single mass of information which has ever been put forward as to the real strength of brickwork. Now, I have had in the course of these experiments to talk with



various people about them, and there are one or two points I wish to bring to your attention. I have been told that what we want is a ratio. Well, if that is intended to mean that you can take a little briquette of cement and test it, and take a single brick and test it, and that with these data you can go to a table and find a ratio which will give you the strength of any single pier, I am afraid we are still a century or two off the amount of knowledge required for that purpose. And in fact I do not quite like the expression that we are seeking a ratio. What an architect or an engineer wants to know, I suppose, is the absolute measure of the strength of the things he is building; he wants to know what is the actual load he dare put upon them. Now at all events it is quite clear that with bricks of different strengths to begin with, we shall get piers of different resistance when built. I do not think the ratio between the strength of a brick and the strength of a pier will be at all a simple one, but there will be some relation between the strength of the bricks and the strength of the piers, and therefore one of the inquiries which were carried out has been to make a series of tests of the bricks actually employed. A table of the strength of the bricks has been given, and some members of the Science Committee were good enough to come to the Central Technical College and to see some of the bricks tested, and how the work was done. You will see that the London stocks carried only about 84 tons to the square foot before they crushed, and the good Staffordshires went up to at least as high as 700 tons to the square foot; so we have bricks of very wide variations of strength. I had only a testing-machine that would go up to 100 tons, and in making those tests I found that in the case of the strongest bricks I could only test them as half-bricks, not as whole bricks. Therefore it occurred to me, Is there any difference between the strength of a half-brick per square foot and the strength of a whole brick per square foot? And I made a few tests on the strength of half-bricks and the strength of whole bricks of the same kind, and it comes out that generally the half-bricks are not quite so strong on the square foot as the whole bricks—a result which on theoretical grounds one might have expected. But I want to put in a special caution. In the case of London stock bricks the tests indicate that the half-bricks only carried half as much per square foot as the whole bricks. I am pretty sure that in that case we got a strong brick to test as a whole brick and a much weaker brick to test in half-bricks, and that the result exaggerates the difference considerably. Since then I have looked up some older results of mine on half-bricks and whole bricks, and I do not find, even in the case of London stock bricks, so large a difference as that. No doubt, on the average, the half-brick does not give quite so great a strength per square foot as the whole brick. It was desirable also that

we should know something about the mortar and the cement that we used; and some of the lime and cement and sand was sent down to me for testing. As these are cases where the cement and mortar are used in compression I elected to test the lime and cement in compression. The ordinary way of testing—cement at any rate (lime mortar is very seldom tested)—is to make a small briquette of neat cement, and test it at the end of a week. That is a very valuable test, if you want to know whether the cement-maker is keeping up a certain standard quality of cement; it is quite useless in considering the strength of piers such as these, where the cement is mixed with sand and used in compression. I elected to make tests in compression and to make tests of mortar briquettes. The contractor did not send me very much of the sand of which the piers were made—only enough to make a briquette or two. I am not sure that was a misfortune, because I think on the whole it is better to use exceedingly good and pure sand, and I made most of the briquettes with what is the nearest approach to standard sand in this country—the sand selected many years ago by Mr. Grant, of the Metropolitan Board, and used since by the late Mr. Fajja, myself, and others as a standard. It is an exceedingly pure and clean sand, obtained from Leighton Buzzard. The briquettes made with standard sand were nearly twice as strong as those made with the sand used in building the piers. This is not at all a surprising difference, because the sand used on the works had more or less earthy matter with it. So much for the materials. I believe I am somewhat responsible for the fact that an hydraulic press was used in these tests. When I was asked to join the Committee these tests were under consideration, and my old friend Mr. Fajja had suggested that tests of this kind could be made by rigging up some kind of temporary lever for crushing the piers. I did not see my way, without a very large expense indeed, to rigging up any kind of lever which would satisfactorily test piers requiring loads of 100 tons, and probably 200 or 300 tons, and I suggested the use of an hydraulic press. The press we have been using is not an unprecedentedly large one—there have been larger—but it is an exceptionally large press. I went to Sir Benjamin Baker, and said, "We want a very big press, and want to borrow one for a long time." And I asked him whether he knew where we could get one, and he said if the Institute went to Sir William Arrol he would probably lend one; and Sir William was good enough also, in addition, to construct the steel work required to convert the press into a testing-machine. Now, presuming a press to be used, I had to consider one point. An hydraulic press used as a testing-machine has got a very bad name, and not undeservedly, because what the pressure-gauge on the hydraulic press directly gives you is only the pressure in the ram cylinder, and it does not give

the load that the press exerts. There is a difference between the two, due to the very large friction of the ram. That friction is as low as 4 per cent. in some cases, and in other cases it rises up to 25 per cent. of the load that the press exerts; and although 25 per cent. error would not be so large an amount that it would entirely destroy the value of these experiments, still it was very desirable indeed that we should know more accurately than within 25 per cent. what the real load exerted by the press was; and at any rate to avoid criticism of the results, it was desirable that we should have some independent check on the load that the press exerted. It occurred to me then that we might get very accurately indeed the actual load that the press exerted by a method analogous to that used in testing the pressure of gunpowder in a gun. By preparing some copper cylinders and crushing one in a very accurate testing-machine, and observing what its compression was for any particular load, and then by crushing another of exactly the same quality in the actual press, and observing what its compression was, we could determine exactly what the force of the press was corresponding to any particular pressure on the pressure-gauge. I have here some cylinders that we have crushed, and the results that we worked out of the compressions with copper cylinders come out even more uniformly than one could have hoped. I believe we have determined the real loads exerted on those piers with an accuracy of something under 1 per cent. Then let me say this: I have heard some people say that, after all, the experiments are not much use, because we know all about brickwork. Now, it is my business to know something about testing, and I think I know probably, at any rate, all the published results in the testing of brickwork. They are astonishingly few. The earliest that I know of are some made during the building of the Menai and Conway Bridges. The engineers built some 10-inch cubes of brickwork in cement, but they do not say what cement. I suppose it was Roman cement. And they also forgot to give the age at which they were tested; but I suppose they would be two or three months old, and they carried  $33\frac{1}{2}$  tons per square foot before crushing. When you put those aside, there are hardly any others down to a very recent date indeed. Dr. Böhme at Berlin, who tests building materials for the German Government, made some very valuable tests on 10-inch cubes of brickwork made with cement and lime mortar; but there are no tests in actual structures of brickwork at all comparable to those which the Committee have undertaken, except a series carried out in America by the American Institution of Civil Engineers. The tests were made with the magnificent testing-machine at Watertown Arsenal. I thought it would be interesting to members to have those tests at hand, to compare with the tests that the Science Committee of the Institute have

been making, and I have prepared an abstract of those American experiments, reduced to the same units, and tabulated so as to be easily comparable with the results obtained by your Committee. You will find that those tests give larger crushing pressures than we have at present obtained on any of the piers. That is due to two causes. In the first place, the Americans used very strong bricks, stronger indeed than any we have been using; and in the second place, their piers were tested, a few of them at fourteen months old, most of them at twenty-four months old, and for that reason alone they would be stronger piers than those we have been testing. I think I have only one word more that I should like to say at present, and that is as to the way in which these piers give way. Although we talk of crushing these things, so far as I know in brittle materials of this kind there is no such thing as crushing. These piers have not given way by crushing; they have given way by shearing or by tension; and the very interesting diagrams that Mr. Garbutt has prepared show the real nature of the two kinds of fracture which occur in structures of this kind. When you put a compressing load on a vertical pillar of that kind there is a crushing stress on all transverse sections; but there is also simultaneously a shearing stress which is at its maximum on planes inclined at forty-five degrees to the axis of the pier, and a lateral tension on the vertical sections of the pier. If you put a vertical load upon the pier you produce a diagonal shear and a lateral tension. If the structure is one that has special vertical planes of weakness like the joints in a pier which has not been built very long, then the crushing load develops vertical fissures, due to the tension acting horizontally. If the pier does not give way at those vertical planes of weakness, then it gives way along the planes inclined at forty-five degrees to the axis by shearing. I have here a couple of bricks showing exactly a typical failure by shearing in a quite homogeneous block. Another, you see, has given way by shearing at planes of forty-five degrees to the axis. When we come to test the piers which are older, and in which the cement and mortar will have set more thoroughly, I think we shall have more complete examples of shearing, and fewer examples of tearing by lateral tension.

Mr. H. F. DONALDSON, M.Inst.C.E., Chief Engineer of the London and India Dock Joint Committee.—Sir, the Papers we have heard are to us most instructive and most interesting. With regard to what Professor Unwin said, that in testing his cement he did not consider it necessary or of importance to test for tension—he tested simply for compression—it appears to me, by the example he showed us with a brick, that tension is very necessary in arriving at some data of the material used in the construction of the piers. I noticed one or two points when I was down at the scene when the piers were being broken. In the first place, it was



not, I thought, weather for such work at all; it was extremely cold, and I think the Institute owes a great debt of gratitude to the Committee for standing it out. Another point is the enormous difference which exists as between the crushing strength of, say, Leicester Reds in the brick itself, which is stated to have stood 382 tons per square foot, and the results shown in the bricks when they are in the form of a pier. I think the highest of the Leicester Reds was about 67 tons, which finally failed by bending suddenly: this seems to me to point to the tensional strength of the cement, or lime, or whatever it was that was used, being taken into account as well as the crushing strength.

MR. P. GORDON SMITH [*F.*].—Sir, we owe a great debt of gratitude to Professor Unwin for the very valuable help he has afforded us, as well as to those gentlemen who have spent so much time in looking after the conduct of the experiments. These experiments have been conducted up to the present time on piers which are only some three or four months old, and I shall attach a great deal more importance to the experiments when the piers have attained the age of nine or ten months. But I must remind members that these experiments can only be carried out if money is forthcoming, and I hope that liberal support may be afforded to us in the shape of subscriptions, to enable the Committee to carry on the experiments to a satisfactory conclusion. Although these experiments are in the early stage of progress, I think we cannot pass over the present occasion without offering our cordial thanks to Sir William Arrol for his help in giving us the opportunity of using a powerful machine for testing these large masses of brickwork; and I should also wish to ask you to thank Mr. Donaldson for his help in affording us the facilities we have had at the Docks.

MR. JOHN SLATER [*F.*], B.A.Lond.—Sir, I believe Mr. Gordon Smith, as one of the Science Committee, was unable, or through modesty did not like, to include in the vote of thanks which he suggested this Meeting should pass to Sir William Arrol, Mr. Donaldson, and others, the thanks which we certainly owe to the Committee for the trouble they have taken in carrying out these experiments; and I think more especially for giving us here these lantern illustrations of the piers, for there can be no better way possible of showing views of the experiments to a meeting like this. The photographs taken will also, if I may say so, be a standing monument to the assiduity of the members of the Committee. There are one or two very curious things with regard to these experiments. We were always, of course, under the belief that from about two to four tons, as Professor Unwin said, was a safe load on brickwork; and I am bound to say I cannot help thinking that some element of error has crept into that general table of results when you look at the Gault bricks, because it is a most extraordinary

thing that the final failure of the Gault brick piers with mortar is higher than in the case of cement—it is 21·82 in mortar and 17·98 in cement. I cannot understand that at all, because there can be no possible doubt that cement is stronger than mortar, and in nearly all other cases you find that the piers of cement carry a much greater load than they do in mortar. I should be very glad if Mr. Street or some one else could give us some explanation of that very curious fact. And in addition there is a very small difference between the load at which partial failure is shown, or rather, I should say, at which the commencement of failure occurred. The average of the two Gault brick piers I make out to be 5·54 in mortar and only 7·08 in cement; so that I for one should be very glad to have a little more information on that point. I do not know whether the Gault piers had—perhaps it is a fact that they had—some bricks in the interior that were not of Gault quality, and that may have vitiated the results; but I think it would be well not to publish, as a final statement, the data as to those piers till you have had an opportunity of re-testing them in cement, and especially at the end of a longer period; because it is clear, from the experiments Professor Unwin has made, that both cement and mortar increase in strength with age. There is another very interesting point to which he has alluded, and that is the fact that a half-brick will not carry per inch or per foot super. so much as a whole brick; and he states the reason of it very clearly, because he says the crushing pressure diminishes as the ratio of height to horizontal dimensions increases. Now that, I think, has a more general practical bearing than the mere statement of it would seem to imply; because if that is the case, are we not making a mistake in practical building if we put under heavy girders or columns, or anything of that sort, a thicker stone template than is really wanted? If it is really the fact that the final crushing pressure diminishes as the ratio of height to area increases, then there must be one point at which we can get our strongest template; and if we increase the thickness of it afterwards in a homogeneous material like stone we do harm rather than good. I would suggest to Professor Unwin what an exceedingly valuable series of experiments he might make at the Central Technical College if he would take a square piece of stone, such as York stone, two inches thick, and one of an exactly similar area four inches thick, and try the effect of his 100-ton machine on them. I have great pleasure, Sir, in seconding the vote of thanks to Sir William Arrol and the other gentlemen who have given their assistance; but I am sure that the Institute would not like to leave out of the vote the Committee who have taken such trouble and brought these results before us so plainly and concisely to-night.

THE HON. SECRETARY.—Sir, would not

weight placed on these piers suddenly, or nearly so, by the hydraulic machine give an entirely different result from what would occur in actual building, where the load would be gradual?

MR. BERNARD DICKSEE [A.].—Sir, Mr. Slater has called attention to the fact that the Gault piers in cement failed at a lower figure than in mortar. That was actually so, and that is the real reason why we are rebuilding those two piers. It was generally observed in the case of the cement piers that they did not begin to fail till a much higher weight in proportion to the breaking weight than in the case of the lime piers, the lime piers commencing to fail at less than half the total breaking weight. All the piers failed, more or less, along the line of closure, showing that the way in which we generally build 18-inch piers with two closers is about the weakest form we can adopt. If we analyse these piers we shall find that there are nine columns of half-bricks, nine solid columns  $4\frac{1}{2}$  inches square, one at the corner and middle of each side, and one in the centre of the pier, and the remainder is taken up in one course or the other by closers. Now, in bricks, particularly hard bricks, it is a matter of impossibility to get the closure theoretically correct. It should, of course, be a brick split down longways, but that is never the case: it always consists of two quarter-bricks, and the result is that in the piers there is from top to bottom at each corner a vertical fissure of  $2\frac{1}{4}$  inches by  $2\frac{1}{4}$  inches; so that really we have taken the weakest form of brickwork upon which to experiment. Mr. Max. Clarke has suggested that we should experiment upon a length of wall wherein the closers will not form such a large factor; but that is a matter of funds, and funds have not been forthcoming as our Committee think they should. If there are any present here to-night who have not subscribed to our fund, I trust that, having seen the valuable results we have so far obtained, they will not leave this room without so doing. Mr. Street, or Mr. Searles-Wood, or any other member of the Committee would be very glad to collect the names of those willing to give their guinea. I should like to mention in conclusion that the Committee have also had very valuable assistance from Mr. Dibdin, chemist to the London County Council: he, at my request, transmitted through Mr. Blashill to him, has prepared a careful analysis of the mortar used, after we had experimented upon it. His report will be published along with this Paper, and I propose that this Meeting pass a hearty vote of thanks to him.

PROFESSOR AITCHISON [F.], A.R.A.—Mr. Vice-President and Gentlemen, a great part of my early professional life was spent in building and in surveying heavy structures, mainly warehouses, in which the strength of brickwork was a very important factor. In most cases the brick piers had failed from overloading, for, when pressed for room, warehouse-keepers will almost double

the load allowed rather than send goods away; but sometimes from the improper bedding of the C.I. plates for columns on the bases of stanchions. One of the obligations that we are under to the Committee, to Professor Unwin, and to the other gentlemen who have helped us, is the information they have given of what piers will bear within a few months of their erection, and especially those in mortar. Loading piers or walls before they have had time to properly set I look upon as being one of the greatest sources of failure. How long it takes to thoroughly set the mortar in the centre of a pier of 18 inches or 2 feet 3 inches or 3 feet square I do not know, but it must be the work of some years, because so soon as the outer surface of the mortar has set, the probability is that the air enters less freely into the body of it, and therefore the inside mortar takes a long time to set; and most of the failures that I have noticed have been in piers loaded shortly after they were built. In warehouses such piers are mostly on the ground or basement floor, and take heavy weights. Hardly has the warehouse been roofed in when the owners, being pinched for room, fill it full of goods. You see, therefore, it would be a most important thing for us to have some approximate idea of what the strength per square foot of piers built in mortar would be when the face joints only were set; also the time it would take for the wall to be thoroughly set throughout, and what the brickwork would then bear per foot superficial. I recollect seeing a pier 2 feet  $7\frac{1}{2}$  inches by 1 foot 6 inches which bore a girder flush with its 2 foot  $7\frac{1}{2}$  inch face, which buckled, and the bricks of its face were crushed with a weight of  $2\frac{3}{4}$  tons to the foot superficial. The pier was of stocks set in mortar gauged with cement, not over-well executed, and loaded as soon as the face joints had set. I had a good many experiments made on 9-inch cubes of brickwork in cement, both of London stocks and Malm paviers, as well as they could be made in my younger days. The crushing weight I paid very little attention to, for the cracking weight is the first sign that the material gives of being loaded with more than it can bear.

All cubes set 8 months before being crushed, and crushed between No. 2  $\frac{3}{4}$ -inch spruce boards.

No. 5 9-inch cubes of Malm paviers in cement and sand:—

Average weight, 42·2 lb.

Average cracking weight, 14·2 tons.

Average crushing weight, about 38 tons.

Average cracking weight per foot superficial, 25·2 tons.

No. 6 9-inch cubes of London stocks set in Portland cement and sand:—

Average weight of cubes, 42 $\frac{1}{2}$  lb.

Average cracking weight, 17·66 tons.

Average crushing, 44·83 tons.

Average cracking weight per foot superficial, 31·3 tons.

The piers, 18 inches square and 6 feet high, the Committee experimented on certainly showed a most extraordinary falling off from my experiments, but the two queen closers were doubt-

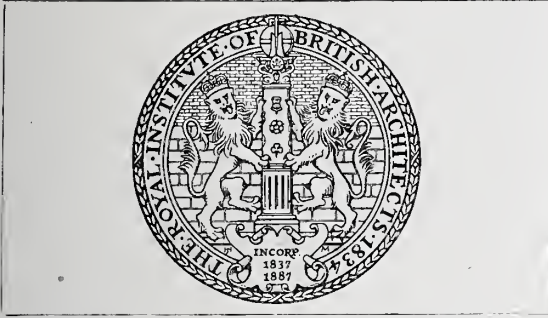


less a great source of weakness, only they were inevitable; it should open our eyes to the loss of strength in built brickwork, and would be a much greater loss of strength in ordinary work. When we are using Staffordshire bricks we should have the king and queen closiers made. Our friends the engineers, who have done such marvellous works in iron that they have filled the world with astonishment, are constantly on the look-out for all the particulars that are wanted for carrying their works to perfection, so we must look to them for almost all the knowledge of materials we are to get. Doubtless they will not overlook the time it takes to have brickwork, even in cement, arrive at its greatest strength. There is one great difficulty in the use of cement, that it will not bear fire. Brick piers under fire fly to pieces; therefore there is great advantage in the use of mortar for us who build, we hope, for all time. I have now to thank the Committee for all the trouble they have taken, and Professor Unwin and the other gentlemen who have been so kind as to lend us their aid.

Mr. F. WALKER, Clerk of Works, author of *Brickwork*.—Sir, I noticed one thing in particular which has already been referred to, that is, that the line of least resistance is in the line of closure; and another thing struck me very forcibly, namely, the greater results in the 14-inch pier as compared with the results in the 18-inch pier. I have just reckoned up that in the 14-inch pier you reduce the area of the 18-inch pier by one-fourth, and you reduce the vertical joint by two-fifths; and it struck me that the number of joints in your brick piers might very considerably have something to do with the strength of the pier. It has also struck me as remarkable that your piers in all cases, with one or two exceptions give way in the line of closure. It also struck me that the gentlemen experimenting on these piers and fractures in the line of closure did not suggest another method of bonding. Now, I was in the United States for five years, and I noticed there that the bond of brickwork is very different from what it is here. It is only on engineering works that they adopt the old English bond; but generally the bond is a  $4\frac{1}{2}$ -inch bond, which brings heading courses running through in some cases into the third or fifth course; and I have actually known them run as many as eight stretching courses throughout a building to one heading course. In England we must all have noticed when we have a fracture in a wall that it is always in the transverse direction, in the direction in which you get the most joints. I should like to suggest to the gentlemen making these experiments that they should run two courses in the piers  $4\frac{1}{2}$  bond, and each third course a heading course; also that they should run five courses  $4\frac{1}{2}$  bond, and every fifth course a header. I do not know what the result would be; I am only with your permission throwing that out as a suggestion.

No doubt you are all aware of that bond known as the Dutch bond, by which means you do away with the closer and work your coign with whole brick and every alternative course three-quarters of a brick, starting from the three-quarters brick with a header, so that you do not have that weakness which is introduced in your piers by the closer. One gentleman remarked upon the results obtained from the sand used by the test being double that attained on the building, which he attributed to the presence of earthy matter in the sand. I would like to suggest that the size of the particles may have something to do with the strength of the resulting mortar, especially with cement; because it seems to me that if you have very small grains of sand your cement has more work to do in causing those numerous grains to adhere in the mass than it would have to do if the grains were somewhat larger. With respect to American bricks, I can also testify that they are infinitely better and much harder as a rule than English bricks. One speaker has suggested 9" x 9" bricks. I would simply like to remark in that connection that it would add considerably to the cost of the brickwork; that instead of getting the proverbial 1,000 a-day laid by the bricklayers (and I am prepared to say that you more generally get 600), I think you would get very much less, and would add infinitely to the cost.

THE CHAIRMAN.—Gentlemen, the Science Committee have fortunately initiated this work of testing the value of bricks and the strength of bricks and brickwork in various forms, the experiments being preliminary to a larger series which they hope to make by-and-by if the money comes in. I hope they will receive every pecuniary assistance, and be able to continue the work they have begun so well. This is one of those happy instances where architects and engineers, and distinguished authorities like Professor Unwin, co-operate for the common good. I know we as architects are indebted very much to engineers for many things; we are indebted for those elaborate formulæ and tables so familiar to us when we want to know the strength of a wrought-iron girder, or the strength of a column to support a girder or a wall. But now we architects hope to assist the engineers; and in the matter of testing brickwork our Science Committee are going to add to our amount of knowledge on the strength of materials. In the course of time, I have no doubt we shall have a very valuable text-book on the subject; and it is very gratifying to me this evening to propose to you the vote of thanks, which has been moved by Mr. Gordon Smith and seconded by Mr. Slater, to Sir William Arrol, to Mr. Donaldson, and to Mr. Dibdin; to Mr. Wonnacott for his photographs; and last, but not least, to the Science Committee, with especial mention of Professor Unwin for his kind co-operation in the conduct of these experiments.



9, CONDUIT STREET, LONDON, W., 2nd April 1896.

## CHRONICLE.

### THE MIDSUMMER EXAMINATIONS.

The Progressive Examinations, ultimately qualifying for candidature as Associate, are held this year in the month of June, as follows:—

Preliminary Examination, to qualify for registration as *Probationer*: 16th and 17th June.

Intermediate Examination of *Probationers*, to qualify for registration as *Student*: 16th, 17th, 18th, and, if necessary, 19th June.

Final Examination of *Students*, to qualify for candidature as *Associate*: 26th June to 4th July inclusive.

All the above-named Examinations will be held, in London, at the Examination Hall, Victoria Embankment; and, simultaneously, both the Preliminary and the Final Examinations will also be held at provincial centres under the charge of Allied Societies as heretofore. An Intermediate Examination for Scotland will take place under the charge of the Glasgow Institute of Architects, provided not less than twelve Probationers make due application to be admitted to it. This, if it take place, will be the first time the Intermediate Examination has been held out of London.

A special Examination qualifying for candidature as Associate (subject to section 8 of the Charter), for architects in practice who are not less than 25 years of age, and for chief assistants over 30 years of age, will take place on the same days as those allotted to the Final Examination, above mentioned. This is intended for applicants exempted, by special Resolution of the Council, from the Preliminary and Intermediate Examinations, and from submitting Testimonies of Study. An applicant not in the active exercise of his profession previous to 1st January 1885 is expected to submit Probationary work, which may consist of the working drawings of a building, executed or otherwise, of his own design, with a perspective view (not necessarily of that building) and a drawing of some ornament from the round.

By a recent regulation, in force since the 1st January 1896, applicants admitted to any of the three Progressive Examinations, or to the Special Examination, who are unsuccessful at their first

sitting, may present themselves a second time without a further fee; but should they then fail to pass, a fresh fee must be paid for each subsequent attempt.

### The Final Examination: A New Prize.

Mr. Arthur Cates proposes to give a Prize of Books (value ten guineas) to the *Student* who submits the best Testimonies of Study for admission to the Final Examination and who passes it. The Prize is open to competitors among the Students R.I.B.A., at both the Final Examinations annually held, and the first of these competitions will take place this June. Fuller particulars of Mr. Cates's gift will be found in the following letter addressed on the 14th ult. to the Secretaries:

DEAR SIRS,—The preparation of the Testimonies of Study required to be submitted to obtain admission to the Final Examination is of so high an educational importance that the standard of execution should be good. With a view to encourage some little competition in the production of these "Testimonies," and promote the attainment of a high standard in their execution, I will give ten guineas (£10. 10s.) as a prize to be expended in books suitably inscribed, to be awarded at each Examination to the candidate whose Testimonies of Study shall be considered by the Board of Examiners to best merit such prize, on condition that such candidate pass the Examination, on the occasion to which he has been admitted. Should he fail to pass, the prize to be awarded to the candidate next in merit with his Testimonies who may have passed satisfactorily, provided that the Board are of opinion that the Testimonies are of such quality as to merit the prize. As this prize is offered for each Examination, and only for excellence in the preparation of the Testimonies, it is not likely to clash with the Ashpitel, which is only awarded once in the year, and then for general excellence, though happy will be he who may succeed in winning both. I hope that when this is communicated to the Students it will encourage them to endeavour to attain excellence in the production of the Testimonies.—Yours faithfully, ARTHUR CATES.

The Council, when accepting this offer, made, as they felt, in the interests of professional education, expressed their high sense of its value, and ordered a resolution of thanks to be recorded in the Minutes of their proceedings.

### Mr. Penrose and the Parthenon.

The President, whose then imminent arrival at Athens was announced in a London paper of the 16th ult., has evidently taken Time by the forelock in his congenial task of once more climbing the Parthenon. *The Standard*, in its issue of the 30th ult., states that Mr. Penrose has taken "new measurements of the ancient edifice, and has discovered, to his surprise, that the preserved portions of the Temple have remained without the slightest change since he first investigated the structure fifty years ago, when he made those original researches which have long been familiar to the students of Greek antiquities throughout the world. In conformity with the advice of Mr. Penrose, the work of rendering the entablature solid and secure is soon to be



"commenced." An extract from a letter dated 19th ult., from Mr. Charles Clarke, who has gone out to measure and make drawings at the excavations now being carried out by the British School at Athens, may be also of interest to members: "Mr. Penrose, who arrived two days ago, has been delightfully clambering all over our excavations . . . with boyish activity in between his other important engagements. I am to have the privilege of assisting him to take some measurements (on the top, I think) of the Parthenon to-morrow morning at 8.30." The letter was addressed to Mr. R. Phené Spiers.

The late Emile Boeswillwald [*Hon. Corr. M.*].

The death of Emile Boeswillwald, on the 20th ult., is an event of much greater importance than the majority of architects in this country and even in his native land are probably prepared to admit. The Royal Institute of British Architects is especially favoured with a notice of the deceased Master from the pen of Monsieur Antonin Proust, a former Ministre des Arts in Paris, and well remembered by those Englishmen who had the honour of meeting him in his official capacity at the International Exposition of 1889. M. Proust writes from Paris, 26th ult., as follows:—

M. Emile Boeswillwald, qui vient de mourir à l'âge de quatre-vingt et un ans, était architecte de la Commission des Monuments Historiques depuis plus de quarante ans. Il était né à Strasbourg le 2 mars 1815, avait suivi les cours de M. Labrousse et était entré à l'Ecole des Beaux-Arts le 29 décembre 1837. A l'Exposition de 1849 il avait obtenu une médaille de deuxième classe, et dès ce moment Prosper Mérimée se l'était adjoint dans ses tournées d'inspecteur général des monuments historiques de la France. Le 12 août 1853 il obtenait une médaille de première classe, et en 1865 il était nommé architecte de la Sainte-Chapelle, inspecteur général des monuments historiques et inspecteur diocésain des départements des Basses-Pyrénées, d'Eure-et-Loir, et de la Sarthe.

M. Emile Boeswillwald a été avec Lassus et Viollet-Le-Duc un des artistes qui ont le mieux étudié et le mieux compris l'architecture du moyen-âge. D'une modestie très grande il n'a jamais fait état des innombrables travaux qu'il a conduits avec une sûreté de vues et une science de la construction qui lui réservent une des premières places parmi les restaurateurs de notre architecture nationale.

La Bibliothèque des Monuments Historiques possède de lui des travaux admirables: 1° la restauration de la Chapelle d'Elsach en Bavière, faite en 1839, six dessins; 2° les ferrures de la Porte Saint-Marcel de Notre-Dame de Paris, façade occidentale, deux dessins; 3° études sur les monuments chrétiens de la Picardie; 4° fragments

d'étude sur une restauration de l'ancienne Abbaye de Saint-Germer (architecture, peintures, vitraux), fin du XIII<sup>e</sup> siècle, cinq dessins, 1842; 5° dessin de la Porte Sainte-Anne à l'église Notre-Dame de Paris, 1844; 6° projet de restauration de la Cathédrale de Laon; 7° église de Niederharlach (Bas-Rhin), trois dessins; 8° église de Neuville (Bas-Rhin), deux dessins; 9° église de Moutier en Der (Haute-Marne), quatre dessins; 10° église de Gulviller (Bas-Rhin), quatre dessins; 11° palais des ducs de Lorraine à Nancy, deux dessins.

L'autorité de M. Emile Boeswillwald dans la Commission des Monuments Historiques dont il était le doyen était telle qu'il y a deux mois, lorsqu'il résigna ses fonctions d'inspecteur général des monuments historiques qui furent confiées à son fils, M. Paul Boeswillwald, professeur à l'Ecole des Beaux-Arts, la Commission par un vote unanime demanda que M. Emile Boeswillwald fût nommé inspecteur général honoraire. Jusqu'au dernier jour de sa vie notre ami a pris part aux travaux de la Commission, écoutant avec une émotion visible les rapports que son fils lisait et dans lesquels il s'inspirait des belles traditions que lui a léguées son père.

C'est à l'enterrement de la mère de M. Formigé, l'un de ses collègues, qu'il contracta le refroidissement qui l'a enlevé. Et le jour de ses obsèques, le petit appartement d'Emile Boeswillwald, au quatrième, était à ce point encombré de ses amis que le plus grand nombre n'y put trouver place et dut se tenir dans l'escalier.

Jamais l'Institut de France n'a eu la pensée d'admettre Emile Boeswillwald au nombre de ses membres, et cependant l'œuvre de ce maître survivra à celle de beaucoup de ses confrères; et il y aura longtemps que leurs noms seront oubliés que l'on honorera toujours ce serviteur scrupuleux de notre art national.

According to *La Construction Moderne* (28th ult.), which has an excellent article on the late Master, Boeswillwald was the son of a baker, and apprenticed to a contractor of "Maçonnerie," under whom he learnt the art of building in stone, moellons, bricks, plaster, &c. He spent the year 1836 at Munich, working, it is said, on the classic buildings then in course of execution for King Louis of Bavaria. Thence he came, by way of his native city, Strasbourg, to Paris; and there entered the "Atelier" of Labrousse, in which he found a fellow-citizen named Klotz—who was for thirty years architect to Strasbourg Cathedral—and Lassus, the predecessor and contemporary of Viollet-Le-Duc in the charge of various important historical monuments. His real master, it is also said, was Lassus, under whom Boeswillwald was "Inspecteur" in 1845 at Notre-Dame, Paris; and his most important works of restoration, in which he showed himself superior to all his French professional brethren, were the cathedrals of Chartres,

Bayonne, and Laon. At the last named, in 1874, he received the members of the Architectural Association, who, under the guidance of Edmund Sharpe, visited some of the chief cities of the North of France—reaching Laon in haste from the South, where he had been staying, and displaying immense activity in his desire to explain to the excursionists important points of interest in the Cathedral. Indeed, after that, no one was more enthusiastic in praise of Boeswillwald (who, *pace* French susceptibility, spelt his name with three l's, not two) than Edmund Sharpe; and the latter, with Mr. Penrose, proposed him as Hon. Corresponding Member, his election having taken place on 1st February 1875. Five years afterwards the Imperial Academy of Vienna accorded him a like recognition. But, as M. Proust warmly regrets, the Académie des Beaux-Arts, treating him as it had previously treated Viollet-Le-Duc, closed the doors of the Palais de l'Institut against him.

That he was always simple and unaffected, always charming in phrase and manner, as when he wrote in 1880 refusing a Paper on his restoration of Laon Cathedral, and as he was the same year at Bayonne when he conducted two English confrères over the cathedral of that city, his friends at a distance know full well; that he was the personification of the Mediæval Master-of-the-Work, whether *en blouse* in his Paris studio, when he laid before you working drawings of the latest building he had in hand, or *en grande tenue* as a visitor to the International Exposition of 1889, none who knew him and his career can deny. It was to many a great disappointment that Boeswillwald was not present at the Banquet of the Société Centrale on the 7th ult., and expression was given to the regret felt at his absence from a function of such interest to all who took part in the proceedings.

#### The great work on St. Mark's, Venice.

The Library has been enriched by the addition of Cavaliere Ferd. Ongania's remarkable monograph, entitled *La Basilica di San Marco in Venezia*. This exhaustive work, the fruit of ten years' unremitting labour, finally completed in 1888, comprises four volumes of text (three folio and one quarto) and five portfolios of illustrations. A glance at the contents may give some slight idea of the scope and magnitude of the editor's task. The first volume includes a series of Essays on the Legends and Historical Records relating to the Basilica, the Jurisdiction of the Doge, the Procurators of St. Mark, the Holy Office, the Deans, Ancient Rites and Ceremonies of the Church, and the Choir. In the second volume is given the architectural history of the Basilica from its early Byzantine period to the close of the sixteenth century. In the third volume are described the pavement, the crypt, the sym-

bolic sculpture, the statues from the fourteenth century down to comparatively modern days, the enriched columns which support the ciborium, the mosaics and inscriptions, the various marbles used in construction or for decorative purposes, the metal-work, wood carvings, and *tarsia*, the famous bronze horses which adorn the façade, and the works of restoration carried out at St. Mark's within recent years. The fourth volume, a quarto, contains extracts printed in fac-simile from ancient chronicles and public records bearing on the history of the Cathedral. A summarised translation of these documents is given in English. The illustrations in Portfolio I. include geometrical elevations, plans, and sections of the Basilica in twenty-seven plates, folio. Portfolio II. contains chromo-lithographic views of the building and enlarged details in forty-five plates of folio size. Portfolio III.: details of the mosaic subjects (not included in the geometrical illustrations)—sixty-eight plates, quarto. Portfolio IV.: details of the pavement and mosaic decoration of the vaults and windows of the five cupolas—sixty-eight plates, quarto. Portfolio V.: the figure sculpture and decorative carving of the church (exterior and interior), the altars, amboni, archivolts, capitals, cupolas, monuments, and sepulchral inscriptions, bronzes, inlaid work, &c., in 425 plates, quarto, heliographed from the actual objects. This work was dealt with in a review by Mr. Charles Eastlake in *The R.I.B.A. Journal*, Vol. V. N.S. p. 9.

### NOTES, QUERIES, AND REPLIES.

#### SOUND IN ITS RELATION TO BUILDINGS.

##### Proposed Experimental Research.

In the discussion of the Paper, by Mr. H. W. Burrows [A.], on "Sound in its Relation to Buildings," published in the second volume of the present series of the JOURNAL [p. 353], Professor Roger Smith urged that experiments should be made on the subject and the results recorded. To some extent, said the Professor, every building was more or less an experiment. If the Science Committee would secure a collection of observations upon interiors, their dimensions, their materials, whether they were successful for music, whether they were successful for speaking, &c., such observations, if tabulated with regard to a considerable number of known buildings, would throw light upon what was undoubtedly an obscure subject when applied to practice. Professor Banister Fletcher supported the suggestion, and other speakers who joined in the Discussion urged the desirability of making further inquiries and tabulating facts. This the Science Standing Committee, with the concurrence of the Council, now propose to undertake, and they have drafted, for the purpose, the following questions:—



1. *Plan*.—Give a general plan, with elevations and sections, of the *interior* of the building.

2. *Materials*.—Describe the materials of which the building is constructed, carefully noting the finish of the interior surfaces and the disposition of carpets, hangings, or other similar fabrics.

3. *Construction*.—The construction of the building should be described as fully as possible.

4. *Seating*.—Illustrate the method of seating by plan and section.

5. *Speakers, &c.*—Show position of speakers or musicians in relation to the audience.

6. *Effect of Audience*.—The effect of an audience should be carefully noted. State if the room is better when partially or entirely filled.

7. *Ventilation*.—Describe in some detail the system of ventilation. If possible, note the mean and extreme temperatures and the effect of the variation produced by it and by changes in direction of the ventilation. State the position in which the thermometers are placed. (For full explanation as to the value of these observations, see "Sound in its Relation to Buildings," JOURNAL of the Royal Institute of British Architects, Vol. II. Third Series, p. 353.)

8. *Keynote*.—If the keynote of the building is known, state it, and say whether or not, if the voice is pitched in this key, any improvement in sound is noticeable.

9. *Quality of Sound*.—(a) State what is the general reputation of the building for (1) Music; (2) Speaking.

(b) State what the quality of the sound is—full and resonant, &c., and note any peculiarity of effect, such as echoes and the like.

(c) If defective, state the nature of the defect as carefully as possible.

10. *Remedies*.—If remedies have been tried to obviate defects, state them, and the result obtained. The precise nature of the remedy should be fully detailed.

11. *Additional Particulars*.—Add any particulars not above scheduled which may be considered necessary or desirable, and state age of building.

12. *References*.—Give references (if any) to published descriptions of the building, especially those dealing with its acoustic properties.

13. *Authority*.—Give the names of the experimenters and date of experiments.

The Science Committee ask members to reply to the above questions, and for purposes of classification request that their observations may be written on separate sheets of paper, headed with the name of the building experimented upon, and the subjects treated of. For the convenience of members and others, the questions submitted by the Committee are printed in the *Supplement* issued with this number of the JOURNAL. Answers may be addressed to the "Hon. Secretaries, "Science Committee," at the Institute.

#### Appeal for Funds.

The work already done by the Science Standing Committee, as the Reports, Notes, and Statistics submitted to the General Meeting of the 30th March bear witness, shows results which fully warrant further exertions. The experiments made to this date—on bricks and brickwork—must be regarded rather as tentative than as establishing absolute conclusions; and the money with which they have been made—apart from the aid freely

given by Sir William Arrol and Mr. Donaldson—has been mainly provided by individual members of the Science Committee. The small fund is now not only exhausted, but liabilities have been incurred; and it is hoped, especially as experiments in another department of science are about to be commenced, that both Fellows and Associates will assist the Committee with subscriptions, however small, and enable the useful work, so well begun, to be finished to the advantage of the profession at large.

#### MR. PHENÉ SPIERS'S PAPER [p. 233].

##### Saint-Front of Périgueux [p. 324].

The distinguished author of the works entitled *L'Art de bâtir chez les Romains* (fo. Paris 1873) and *L'Art de bâtir chez les Byzantins* (fo. Paris 1883)—Monsieur Auguste Choisy [*Hon. Corr. M.*]—who has been in communication with the author of the recent Paper on Saint-Front, has addressed a letter on the subject to Mr. Spiers, which, with the writer's permission, is here given:—

MON CHER CONFRÈRE,—Veuillez m'excuser d'en être encore à vous remercier de l'aimable envoi que vous m'avez fait de votre beau mémoire sur Saint-Front de Périgueux. Le travail de De Verneilh, remarquable pour l'époque où il a été fait, avait besoin d'être révisé, et vous avez repris la question en la traitant d'une manière qui je crois sera définitive. On ne pouvait mieux mettre en lumière la chronologie des édifices trop souvent confondus sous le nom de Saint-Front; la date de la basilique à comble de charpente ne saurait plus être discutée, non plus qu'on ne pourrait soutenir l'ancienneté de l'église à cinq coupes: toute cette discussion de chronologie est absolument lumineuse.

La discussion des influences byzantines et du rôle de Saint-Marc m'a aussi vivement frappé. Et enfin vous avez élucidé cette question de l'interprétation de la donnée byzantine du pendentif à l'aide de matériaux de pierre. Cette interprétation n'était rien moins que la création d'un type nouveau de construction, et ce type nouveau serait bien réellement propre à l'école d'Aquitaine. Voilà un ensemble de conclusions auxquelles je suis heureux de m'associer et qui jettent un jour bien vif sur une branche importante de l'histoire de l'art à l'époque romane. Permettez-moi, mon cher confrère, de vous féliciter de les avoir traitées d'une manière si lumineuse; et veuillez agréer une nouvelle expression de mes sentiments les plus cordialement dévoués. A. CHOISY.

Mr. Phené Spiers may be justly pleased with such testimony to the value of the conclusions at which he arrived in his Paper on Saint-Front.

From PROFESSOR G. BALDWIN BROWN [*H.A.*]—

If I ask leave to say an additional word on this subject, it is not merely to discuss rival theories,

neither of which may be capable of absolute proof, but rather to point out the need of further investigation into a most interesting chapter of Mediæval architecture. The theories of De Verneilh had at any rate one merit—they fitted and explained the facts as he conceived them. Now that the facts, *i.e.* the relative dates of the domed churches of the district in question, are differently viewed, the theories are of no help, but are rather in the way, in that they check further independent investigation. There are two questions which, even after the excellent work done by Mr. Spiers in his Paper, still require elucidation. One is the origin and early history of the dome in this region of France. Mr. Spiers rejects a Byzantine origin and claims the feature as indigenous [pp. 250, 251]; yet the Périgord domes must be, one would think, connected with the Early Christian cupolas of the West, and it would be interesting to know whether any reason can be found for the revival of this form in this particular region in the Mediæval period. The other question is the position of Saint-Front in relation to the other domed edifices of the district. Considering the number of these, and the fact that they are by no means all after one pattern, one would naturally suppose that Saint-Front is only one variety of the local type. To assume that at the very end of the development of domed churches in Périgord their builders ran to the further side of Europe to copy a foreign plan seems unnecessary. De Verneilh's theory has lost the significance it possessed at first, and might now with advantage be dropped in favour of the hypothesis of a native origin for Saint-Front, as well as for the other churches of its class. The suggestion of Dehio and von Bezold seems to give the common sense of the situation. When the old Latin church was to be rebuilt, it would be most in accord with precedent for the new structure to take up the site of the old, and this it would just have done had it received the long nave of the Latin cross plan, which occurs elsewhere in the district. (Mr. Spiers holds that there is evidence of a desire to spare the old church, because it contained the bodies of saints. All the greater Mediæval churches, however, swarmed with saints, and yet they were rebuilt over and over again.) On this supposition Saint-Front is not really a Greek cross plan, but a Latin cross plan truncated; and this seems to me, I must confess, a more likely hypothesis than that favoured by Mr. Spiers [p. 325].

There remain the pierced piers. At present the only available explanation of these is that of a derivation from St. Mark's, but by themselves they would hardly avail to sustain the Venetian hypothesis. I am inclined to think that, were this hypothesis once out of the way, independent investigation would bring to light evidence of a local derivation for these features also. There are, at

any rate, eleventh-century churches in Normandy where something of the kind is observable. The church of Saint-Céneri-le-Gerei (Orne) is a case in point (see Ruprich-Robert, *L'Architecture Normande*, I. pl. ix. fig. 10). Here the piers of the crossing project into the single aisle, and are pierced with a passage through into the transept. Neuf-marché (Seine-Inférieure) (Ruprich-Robert, *l.c.*, p. 58) shows something similar. These examples seem to encourage a search for the genesis of the pierced pier much nearer home than Venice.

#### The Domes of Aquitaine [p. 325].

From JOHN S. QUILTER [*F.*].—

I regret the tone of Mr. Spiers's remarks on this subject, as it makes it impossible for me to reply to criticisms which indicate that the writer has failed to understand the points he criticises. He has also misquoted some of my statements, so that a meaning is given to them contrary to their natural intention. I must therefore leave the matter as it stands for the impartial judgment of the readers of the JOURNAL.

#### The Mysterious Wreck at Nemi.

From JOHN HEBB [*F.*].—

Mr. J. Tavenor Perry [*A.*] contributed a Paper to the JOURNAL of the 5th December 1895 [pp. 77-81], on "Some Recent Discoveries at Nemi in 'the Roman Campagna,'" illustrated by photographs of bronze mooring-rings, &c., which had been recovered from the bottom of the Lake of Nemi, near Albano, the lake apostrophised by Byron in the famous passage:—

"Lo, Nemi! navelled in the woody hills  
So far that the uprooting wind which tears  
The oak from his foundations and which spills  
The ocean o'er its boundary, and bears  
Its foam against the skies, reluctant spares  
The oval mirror of thy glassy lake;  
And calm as cherished hate its surface wears  
A deep cold settled aspect none can shake,  
All coiled into itself and round as sleeps a snake."

CHILDE HAROLD, Canto 4, clxxiii.

The Commendatore R. Lanciani [*Hon. Corr. M.*] contributes an article on the subject to *The North American Review* (February), giving an historical account of the various attempts made to explore the bottom of the lake, and the results of recent operations. It seems that, from the earliest times, there existed a legend that at the bottom of the lake lay what was proclaimed to be a ship five hundred feet long and as rich and beautiful as an enchanted palace; and more than one adventurous person, undeterred by previous failures, endeavoured to bring it to the surface.

The first regular search was made by Leone Battista Alberti in the reign of Eugenius IV. (1431-39), the second by Francesco de Marchi in 1535, the third by Annesso Fusconi in 1827, and



the last by Eliseo Borghi in 1895, which has not been completed. After describing the results of the first three attempts, Professor Lanciani quotes Nibby, who witnessed Fusconi's search and was satisfied that the supposed ship was nothing but the framework and foundations of a building which projected into the water a considerable distance from the shore. This, he conjectured from a passage in Suetonius, was built by Julius Cæsar, who commenced a villa on the shores of the lake and destroyed it when nearly finished.

Nibby's conjecture appears from recent discoveries to have been in the main correct, but from an inscription on a lead water pipe—"CAESARIS—AUGUSTI—GERMANICI"—it seems established that the emperor who laid this pipe and presumably erected the building to which it was attached was the Emperor Caius or Gaius Caligula, the youngest son of Germanicus and nephew of Tiberius, the Germanicus *par excellence* (A.D. 37–41).

The conclusion at which Professor Lanciani has arrived is that there was a landing pier and a building of some kind upon it; and that there was a ship of modest size, lying alongside, which had followed the fate of the landing pier. He further considers that we may identify the wreck with a pier or jetty or landing-place resting on piles lined with mooring rings for the accommodation of the small boats plying in the Speculum Dianæ (as the lake was called, in allusion to the Scythian Diana or Artemis, who was worshipped in the neighbouring groves), and supporting a construction of some kind—a boat-house, bathing or fishing establishment. When the pier sank, through the collapse of the piles upon which it was built, the whole platform slid down the steep incline of the bottom of the lake to a distance of about one hundred feet from the shore. A large boat shared the same fate at the same time.

## MINUTES. XI.

At the Eleventh General Meeting (Ordinary) of the Session, held Monday, 30th March 1896, at 8 p.m., Mr. Alex. Graham, F.S.A., *Vice-President*, in the Chair, with 25 Fellows (including 7 members of the Council), 22 Associates, and several visitors, the Minutes of the Meeting held 16th March 1896 [p. 327] were taken as read and signed as correct.

The Secretary announced the decease of Émile Boeswillwald, *Hon. Corr. Member*, and of George Richmond, R.A., *Hon. Associate*.

The following Associates, attending for the first time since their election, were formally admitted, and signed the Register, namely:—Lawton Robert Ford, Percy Rider Smith, and John Robert Smith.

The Chairman called attention to a complete copy of Cavaliere Ferd. Ongania's great work on St. Mark's, Venice, which had been recently purchased for the Library, and which was laid on the table for the inspection of the Meeting; and also to a copy of the late M. Alphand's Monograph of the Paris Exposition of 1889, presented by Sir Polydore de Keyser, Bart., through Mr. Gruning [F.].

In reference to the latter work the cordial thanks of the Institute to Sir Polydore for his gift were ordered to be entered on the Minutes.

A Report of the First Series of Brickwork Tests carried out under the direction of the Science Standing Committee was read by Mr. William C. Street [F.], and details were described by Mr. Max. Clarke [A.] with the aid of photographic views shown by the lantern; further details were given in a Paper by Mr. Matt. Garbutt [A.]; and Professor Unwin [H.A.], F.R.S., made some observations on the value of the results so far obtained, and reported on his tests of samples of the materials used and on other matters connected with the experiments. A vote of thanks was thereupon passed to Sir William Arrol and Mr. H. F. Donaldson, M.Inst.C.E., for the generous aid afforded by them in the experiments; to Mr. Wonnacott [A.]; to Professor Unwin and the other members of the Committee; and to Mr. W. F. Dibdin.

The proceedings then closed, and the Meeting separated at 10.15 p.m.

## LEGAL.

### Sky Signs.

On 13th March Mr. J. Dowling, of 35, Jewin Street, appeared before Mr. Alderman Truscott, at Guildhall, for an alleged contravention of the sky-signs portion of the London Building Act. The summons was issued at the instance of the Commissioners of Sewers, for whom Mr. Vickery appeared. Mr. Barrett represented the defendant.

Mr. Edmund Woodthorpe, District Surveyor for the Northern Division of the City, deposed that there were certain skeleton letters on the roof of the defendant's premises, which he described as a sky-sign. In cross-examination he said that the sky was not visible through the letters, owing to some boarding erected behind.

The Alderman visited the place and looked at the sign, and found that the sky was partly visible through the top of the letters, but to a very small extent. He asked Mr. Vickery whether he pressed for an order. Of course, if an order was pressed for, he would be bound to make one, as a technical offence had been committed.

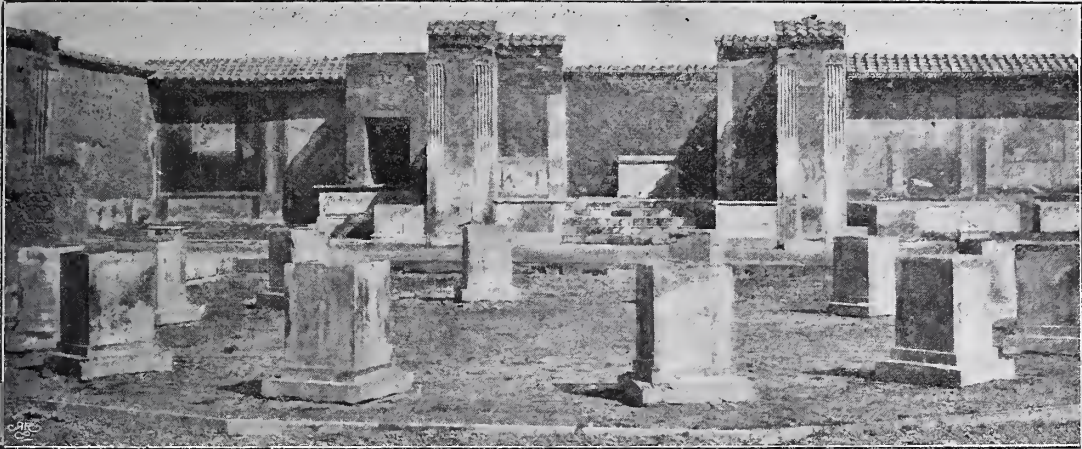
Mr. Vickery said the District Surveyor pressed for an order; and the Alderman made one for the sign to be taken down within the next two months.

On the same day Mr. W. Harris, 32, Bishopsgate Street, appeared to a similar summons in respect of a sky sign upon his premises. Mr. Vickery said the alleged sky sign consisted of an advertisement board outside the front part of the defendant's premises. It was a board fifteen feet high at each side and eleven feet in the centre, and extended the width of the premises. It was fixed to the party-wall by very rusty iron ties, and bore an inscription, "Harris's sausages are the best."

Mr. Woodthorpe, the District Surveyor, expressed an opinion that this was a sky sign. It was not open work, and was securely fixed and not dangerous, though the iron supports were rusty. Notice had been served on the defendant in 1894, but no further action was taken till 1896.

Mr. Wildey Wright submitted that the object of the Act was to prevent dangerous structures, and it was absolutely clear that the City Surveyor did not consider this as such, else these proceedings would not have been delayed so long.

Mr. Alderman Truscott said he had carefully considered the importance of the case, and had come to the conclusion that this was not a sky sign, and that it was not dependent upon the defendant's premises for its support. It was not open to the sky, but was one continuous board. The summons would therefore be dismissed.



### THE ARCHITECT'S USE OF COLOUR.

By HALSEY R. RICARDO, Architect, and CHRISTOPHER WHALL, Painter.

Papers read at the General Meeting, Monday, 20th April 1896; and registered at Stationers' Hall as the property of the Royal Institute.

#### I. By HALSEY R. RICARDO.

**W**HAT a powerful resource Colour is to an architect gets pressed home to him incessantly as he threads his way through the streets of our towns. What is it that arrests his attention and dwells in his memory after his walk is over? The shop windows and the beautiful stuffs inside them, the tiled window flower-boxes, the waving heraldry of a flag, the scarlet splendour of a chimney pot touched by the sun's rays and backed by the immeasurable blue of the sky. In Leadenhall Street, for instance, there are many examples of fine architecture; and yet, to quote my own feelings, amidst that desert of excellent building my thoughts hark back to some half-dozen pictures of ships that hang outside some of the great offices, as oases of comfort and refreshment.

And it is almost the only resource left to us. We have played upon the gamut of light and shadow, and there is no sunshine—as if we had been performers on a dumb piano. The fantasia was of the best, most scholarly; the execution deft to a degree; and the effect nothing, or even less than nothing—like the shocking chatter of dead men's teeth. The piano had strings once; but in the dust and gloom of the corner into which we have impatiently thrust it they have snapped and rotted. We want the room for other purposes: newspaper reading, easy-chairs, and the many other painful aids to comfort that we fret our lives with. So in the streets of to-day, except in the few occasions when monumental building is possible and permitted, the regulation architecture seems strangely superfluous. Who wants all the pomp of cornice, pilaster, architrave, and string? Not the passer-by certainly; for without them the street would be wider, brighter, and clearer. Not the owner who went to the expense of providing these costly features, for he has put outside them great six-foot gold letters, setting forth his name and profession. It is the architect who wants it, and he has been dreaming a fond dream.

In the rock city of Athens, and by the now sad, deserted seashore of Paestum, to take two of many instances, are effects in marble and stone that can never be forgotten. In the Forum at Rome and elsewhere we see the same blow struck again, though with less vigour and



nerve to the blow. Hundreds of years later there springs up a renaissance of these effects, and Europe satisfies its awakened mind with capitals and cornice. Consecrated by time and association, they have lived happily with us, and it seems almost uncalled for the query whether or no by now the brains aren't out.

Shadows of pure ultramarine thrown across the opalescent translucency of weathered marble; the tawny, russet, and gold bosses glinting from the many-hued travertine, peering and flickering from out of the broad band of deep shadows that has so much to reveal—these be beauties indeed! But what hope is there of reproducing these in a modern street, such as, say, Northumberland Avenue—a street built of late years, and according to modern notions of proportion and liberality? Take the cornice. The members that should be brilliant with graduated light are black with the foul smears of sooty water. The soffits which should be dark in shade are light in the (comparatively) natural colour of the stone, and are fast shredding themselves to pieces from the corrosive damp that settles there. And still we go on, ignoring the inevitable travesty that dirt and fog will make of our designs. On our columns a black lichenous growth forms shadows subversive of shape and solidity; whilst as for our capitals, well, the sparrows build in them, or else we hide them in wire cages, so that the poor birds shan't. And then there is frequently the spectacle of all this hamper and apparent solidity based on a sheet of plate-glass on edge.

The remedy for this is Colour. With the use of colour you may forego mouldings and projections: you get their effect by other means. With colour you shall put your lights and shadows where you choose; like another Joshua command the sun to stand at your bidding; and like Orpheus you will “have made a lasting spring.”

It so happens that I am frequently in sight of a wall built by Mr. De Morgan and faced with his tiles. I have seen it at all seasons, under all weathers, in all lights and twilights, and it is always a feast and a rest to the eyes. Think of whole streets vibrating with harmonies of colour, like the black cliffs by the seashore that stand over deep pools of brown and green water, and the short green velvet turf outlines itself sharply against the blue sky. It is within our reach, and, moreover, is profoundly sensible. Your glazed brick or tile is a piece of permanent colour, wind-proof and rain-proof, and, so far as it goes, germ-proof. I should, perhaps, explain that I advocate glazed material and intense colour in the streets of manufacturing and crowded towns where there is no other colour. In the country, and in those favoured cities where houses have gardens, where creepers hang in rich festoons, where the inquisitive laburnum shakes a merry golden tassel at the dowager lilac, and the apples have a friendly rivalry with the pear trees over the way, the local building materials will probably supply us with colour enough to set off and harmonise with the palette set by Nature. But in the street, where all the colour there is is of man's own making, it should be full and strong.

Besides the convenience of colour there is the distinction. What a deal of pleasure have we lost since they blotted out the tile panels in Piccadilly that were over a shop that once was Sotheran's and is now a sausage-maker's! They were not ideally good of their kind, but they always nodded to one in a welcoming way as one passed and looked up at them, and their extinction has lessened the poor gaiety of Piccadilly. The shop has other and considerable architectural merits, but these panels gave it a distinction, causing one to pause and discover its other beauties.

In nature we feel the comfort of colour. Poets and other sensible people send their broken-hearted victims to “dusky groves and purling streams” for solace and relief. So, too, in the insides of our houses we hunger after colour; and if we have the courage of our instincts we get it. With colour you can make your room your own—not wholly, I must

admit, for the proportions of the room and the large, hopeless panes of the windows are unconquerable things. Still, it is the colour you put on the walls more than the furniture that distinguishes your room from another's. I do not mean the colours merely, but the harmony of them and their scheme. A room may have its walls white, and still be full of colour. Colour makes itself felt, and persists in the memory long after the particular pattern used to display it has faded from the mind. Both the "blue" room and the "brown," between which the Vicar of Wakefield used to move, had, I doubt not, patterns on their papers and sprigs of flowers on their hangings, but the rooms were known by their colours.

I have referred before to the economy of colour, enabling one to dispense with much of the architectural frippery felt to be requisite to prevent the surfaces of ungraduated plain tint appearing too bald. Some years ago there was at Barnard's Inn an exhibition of furniture. It was a small but most interesting exhibition. It had various gospels to preach, and it preached them eloquently. One, which pressed itself upon me especially, was that where you had a colour scheme you could dispense with mouldings. A thin line of inlay here, a broad band there, quaint juxtaposition of the figure of the woods, apt employment of various kinds, not only took the place of mouldings unremarked, but seemed almost to cry out "Isn't this a better and a truer use of the material?" What amount of moulding has the Japanese cabinet?

We might, I believe, build our street houses without cornices, strings, or window-sills, and yet receive the thanks of the traffic in the streets. What shall we build them with? In our towns they should be faced with materials that are not affected by the town's atmosphere. This would exclude marble, terra-cotta, brick, and stone, and leave us polished granite, glazed bricks and tiles. It would exclude the tender softening that the finger of Time traces on our buildings—blunting here, harmonising there, accentuating, and suppressing. Our buildings would never look any better than they did the day the scaffolding was struck. In clean places, where the air is pure, this would be a sacrifice unwarranted; but in our manufacturing towns what is this broidery that Time flings round our buildings? It is made of soot. The element of decay is there too, and in such awful violence that it seems doubtful whether a modern building can survive its architect, unless the latter is an old man. Age steals over the face of a building and welds its various parts and materials into a beautiful harmony. Yes, it does—provided that those parts and materials are of the same life as each other. But when they are not? To what end have you courted the weathering of your brickwork if at the end of every three or four years your harmony is dissipated by the necessity of repainting your wood cornice and window-frames? With imperishable materials your building looks no better when you come to repaint than it did when it was new; but when you have repainted the woodwork and washed down its glazed face it looks no worse. It has been objected that the sheen on glazed surfaces would be a serious drawback. I do not think the few examples we have show this. The upper part of a corner shop in Oxford Street was covered with white glazed tiles—a very trying test—but a film of "London's Entire" settled on it in a very short time, and it required some adroitness to select such a position as should show the glare. Indeed, of glazed surfaces our own plate-glass windows should hold out undimmed longest, and yet we know, by sad experience, how often they require to be cleaned. That corner shop was a lost opportunity. We travel all the way to Pistoja to see John Robbia's coloured terra-cotta frieze to the hospital there; we pass by unremarked the frieze of uncoloured terra-cotta to Heath's hat-shop.

The emperor boasted that he found Rome brick and left her marble; with us marble suggests restaurants and underground conveniences. It may be urged that the present bun-shop plays something of the part in our city life that the public baths did at Rome. The Government clerk broke off in the middle of the day and went for an hour or so to the bath,



and came back to complete the rest of his day's toil. In these baths there was no stint of marbles and gilding. Architectural history, therefore, may be repeating itself when we adjourn to rooms upholstered in marble and mosaic for the midday coffee and bun. But the result is that it has now become exceedingly difficult to provide marble as a wall covering without the material suggesting its most popular uses. One has to recall to oneself the Duomo and Baptistery at Florence, or St. Mark's at Venice, to keep the mind in its proper key. St. Mark's of Venice! What magic there is in that name! But the door of description there—since the publication of Mr. Ruskin's *Stones of Venice*—has been closed. But, if I may say so, St. Mark's displays the architect's use of colour, as differentiated from the painter's. The Sistine Chapel, on the other hand, sets forth the sculptor's use of colour—just as Guido's "Aurora" shows the painter's. At an earlier date the arts were not so specialised, and your painter was sculptor, architect, and anything else that might come out of a goldsmith's shop. So that, to quote at random, Giotto's work at Assisi and Padua, Benozzo Gozzoli's in the Riccardi Palace at Florence, Perugino's Sala del Cambio at Perugia, have the decorative and architectonic use of colour. Could you name more beautiful examples of the use of colour? Of mosaic it is satisfactory to think that it is unnecessary for me to do more than quote the last example now being disclosed in St. Paul's Cathedral. It shows that not the last word has been said in the treatment of this material, and where there is so much of vigour and life in a form of decoration, we may predict new developments in its progress. It may be urged that colour used in the profusion that I advocate would be abused, and our state then worse than it is now. "Sir," said Imlac, "if I am to conquer every objection before we start, we shall make no progress." But would it be worse? Over a front sheeted in blues and greens—or in dappled rose, as the front of the Venetian Doge's palace—would not the huge gold letters look less conspicuous than they do now against their background of sooty bricks? Colour, in large masses, is a solvent, absorbing and blending chance hues thrown upon it. How soon a scarlet soldier disappears from sight against a green background of copse and trees!

Putting aside the "superior person," it is quite clear that the general public delights in colour. Witness the public-houses, theatres, and music-halls, with their profusion of glitter. The costermonger paints his barrow in unconscious revelation of his sympathy with the great masters, but with pious effort to hand down the tradition undiminished.

As to cost, the money wasted in idle profusion of column and baluster and carving would defray the extra cost of a faïence front, treated in sober common sense.

As to the architect's actual use of colour, what can be said beyond that his use of it should be large and broad? Indoors your colour may be in picture form if you please; but out of doors you require effect, not detail—bands, diapers, amongst which the windows locate themselves without regard to pattern or symmetry. The pattern is valuable merely as a convenient system of gradation. Not that this should be held the final ideal of outside colouring; we may in time reach the modelled figures of Susa, our buildings clasped and fortified by allegorical supporters; we might impress to our service the romance and portraiture of our time.

I hope this plentiful use of cut-brick in our streets may be taken as the sign of a craving for colour, for surely it has no other justification: the brick itself soon tones into a dull, ungraduated, dirty red, and perishes as rapidly as stone, and it has the disadvantage of being costly as well as short-lived.

As to modern instances of coloured building materials, I shall only cite Mr. Butterfield's work. Here, in London, time and dirt have not been friendly to his buildings: they have blended his schemes of colour till they are now indistinguishable—on the exteriors at any rate.

But in the country and at Oxford one may study his genius under as good conditions as man is likely to get in this poor world. At St. Mary's Church, near Torquay, the church is a symphony in Devonshire marble and alabaster; near Plymouth the material is granite; near Midhurst, clunch. In each case the charm of colour seems to master the beauty of form; at any rate, one's last impression is that of colour. But Keble College is the great achievement. I will not talk of the interior decoration, but confine myself to the outside. Mr. Butterfield has taken the strong step of playing confidently into the hands of Time. Not in our time will the full beauty of his brickwork be developed; but we can see how just are his grounds for confidence as we contrast the different dates of the building and watch its maturing. Part of Jesus College, Cambridge, was built in many-coloured bricks 400 years ago. To describe the beautiful fusion of iridescent tints that Time's fancy has occupied itself in mingling one must use the word opal. The black headers have borrowed of the sky, of the grass, of their neighbours, and gleam as dark blue, green, and purple topazes; the yellow has borrowed of the red, and the red has taken toll of the yellow, till, under scrutiny, the pattern becomes shy and refuses to let itself be traced, though at half-glance it seems obvious enough. The lichens contribute the russets, greys, and gold. In this gay heraldry the windows occur quite simply, and their quietude enforces the splendour of their setting. When our descendants shall be heading their letters with the year 2000 and more they will treasure amongst their possessions at Oxford of the Middle Ages this amazing jewel of our own times.

## II. By CHRISTOPHER WHALL.

**I**N addressing an audience composed of members of one's own profession (I hope I am not making too daring a claim in so describing my position—"I also am an—artist") several methods of doing so always present themselves, and between these it is often rather difficult to know which to choose for the best. There is, first, what one wants to say, what one has most at heart, what one feels that one knows most about; in short, there is the subject as it presents itself to us; as it has become a part of our own life. But there is also what our audience most want to hear: what in our own stock of knowledge may be most likely to be novel or useful.

I shall endeavour, in my remarks, to bear both in mind. I have some things which, if I speak at all, I certainly wish to say—I have some which I am not without hope you may find interesting and useful to hear.

Painters watch architecture a good deal more than I fancy architects at all imagine; and not being able to enter into all the subtleties of construction, and therefore unable also to appreciate to the full all the harmonies of form and proportion which in your work spring from this constructive basis, their attention is naturally first and chiefly arrested by that quality in which they themselves are specialists; and I must admit that too often they are daunted, and baffled, and, so to speak, put off the track of architecture by being met at the outset with such flagrant, such frequent, and, as it seems to them (to us, I should say), such needless sins against the harmony of colour, or at least such needless neglect of its resources. When we see architects of position, to whom we look for light and leading, using that flat, harsh, shiny, ochreous, drab terra-cotta—as disagreeable to all the senses to which it appeals as "mild American" cheese, and rather like it—or when we see some discords in purple slate, or the hardly less fearful discords in green slate, when used—as architects persist in using it—in conjunction with red sandstone or red brick, our eyes get no further, and we look away at once from buildings which often contain great beauties of other kinds because they are presented to us in these colours.



Now the union of the arts is what we all desire ; it seems to be the hope of art for the future, and I think things show that it is a growing hope, and borne at present upon a flowing tide ; and I hail this interchange of ideas which is taking place so much now between the various arts as a most happy augury. This is the third time lately that I myself have been asked to speak to an architectural audience on Colour, and I look upon it as a great privilege, and an opportunity of great usefulness, though I could wish that the task had fallen into stronger hands.

I have asked myself what it is in our training and practice which puts us so far apart. Is it that we study Nature, and that you do not ? We should be arrogant if we made such an assumption ; but I think it lies mainly in this, that all our work is experimental, and some of yours theoretical. I do not say that painters are practical men and architects are dreamers ; that would be too startling a reversal of the accepted view ; but in this particular department of colour the habit of mind which architects have acquired from the practice of solving problems on paper, I am sure, acts as a disadvantage to them. And it is a curious thing to observe, as I often have done, in this matter the painter coming forward as the "practical man." It has often fallen to my lot, in discussing colour problems in company with the architect, to be astonished at his failing to grasp what have seemed to me such obvious requirements of the case, and such obvious expedients for meeting them, and I have put it down to the fact that my constant gathering of materials from Nature, and so going always for help to a source outside of myself, has led me to deal with things as I find them (which is often dealing with the unforeseen and unexpected) ; whereas he has preconceived the thing too much, and the accidents which crop up in practical working, which are so many helps and inspirations to me, are to him sources of hindrance.

I shall venture now to describe to you some practical instances of what I mean. I called on an architect lately and found him surrounded with half-yard samples of "ecclesiastical" textile fabrics, which he had laid out on the floor. "Oh, you're the man I want," he said ; "come and tell me what to choose for the dossal of my church." "Dossal," said I, "isn't that an upright thing ?" "Yes—you know—goes at the back of the altar." "Well," I said, "I thought you were choosing a carpet. Why don't you hang the things up ?" So he hung them up. Then I asked how far off he wanted his effect to be judged from ; and I found it was a big church, where no one except the ministrants would come within fifty feet of the thing. "How is it possible," I asked, "to judge on the matter in this small room with a low light ? I can't tell what they'll look like there ; all I can say is that they look pretty hideous here !" I then asked him if he would not by chance be going down to the church itself (it was a good way in the country) before he need send the samples back. "Oh, yes," he answered, "I'm going down to-morrow ; that's why I wanted to choose the pattern, so as to show the parson." "Well," I said, "you wanted to choose the pattern in your office *because* you were going down to the place itself to-morrow—that's one of the drollest motives for a human action that I ever came across." Of course, the end of it was that he took all the patterns down "to-morrow," and found that not one of them would do.

Now, having thus put my architect friend in the pillory, I am going to hold the dish even by assuming the white sheet on behalf of my own profession, and to allude to a danger which seems threatening the otherwise happy revival of the association of painting proper with architecture. For our painters (misled, as I can only infer, by associating with architects !) are actually adopting the lamentable practice of painting mural decoration in their studios and then having it fixed up. It should never be done, and it never need be done. I have no objection to the wall being lined with canvas if good plaster is not obtainable. I like plaster much the best, but I quite lately did a mural painting in a London church, and the plaster

being insecurely keyed on to the brick, I had it lined with the very same canvas as that used at the Royal Exchange—But (with a large “B”) I put it up plain, and painted the work *in situ*.

Gentlemen, resist that lazy and luxurious practice I have spoken of wherever and whenever you can, and urge your painter to climb the ladder to Parnassus for himself. We shall soon be worse off than ever if our cabinet picture men, turning their attention to decoration, do it in this spirit. The criticism we painters make of what we consider a defect in architectural practice may be summed up in the remark that we want to get you more out of your office; it will be a pretty business if we are allowed to turn the tables by bringing our studio on our back into your buildings.

However, what I want to speak of chiefly is not the association of painting with architecture, but the use of colour in your ordinary methods and materials. Now perhaps you think the instance of my friend who chose his draperies in his office an isolated or exaggerated one; but no; perhaps it's rather a fine specimen, but not unique.

I remember, when I was getting together this palette of building materials to point the moral of my remarks, an architect friend made the objection that it would be a useless sort of thing, as he had always found that little cubes of material were very misleading, and that one must see a rood or two of the stuff in order to judge. That was a useful criticism, as it pointed out a danger; but a danger which could only exist in an architect's mind, for it would never have occurred to a painter to suppose that in bringing these colours together one would dream of recommending anyone to take up the bits in his office and say, “That's a nice colour. I'll use that.” But I will explain how I should use them by telling you of a practice which I have always myself found of enormous use and help. It arose from a remark of one of our Academician painters years ago in the schools of the Royal Academy. He said, “When you go out sketching from Nature always associate your landscape sketch, however slight, with figures, in case you should ever want to use it as a background. You will find that it will be quite a different document to you if you have associated it with the idea of figures from the first; every colour in it will have a new relation; and” (and here is the point) “if it happens that figures are not available, put something into the sketch to give it this key, if it is only your handkerchief on a stick; it will tell you at least what a white dress would look like, and that will tell you almost all the rest.”

Now I say that if you take your sample of material to the spot, and put it up at such a distance from the eye as to cover about the area the material is to fill—no doubt it will not tell you everything; but it will tell you *something*; it will take you out of your office, and away from your theories, and put you in touch with your locality and conditions. And I am sure it is possible, with a very small bit of material, placed in its right light and on the spot, to judge approximately of the effect of a large area of the same. There is a bugbear, known as “aërial perspective,” which is held up as a bar to this. But go to the top of Lincoln Minster and see the eighteen miles of the Great North Road, straight as an arrow through the landscape, and tell me the difference in tint between the first mile and the eighteenth. It is nothing like the difference of tint on a faded buff ribbon. Or look at the thirteen miles of sea from the deck of your steamer (on blue water, of course). On a clear day the blue is the same on the horizon as it is at the vessel's side, just as Henry Moore would have painted it.

Let me illustrate this further. Here is a sketch of a stained-glass window (it is not the one with which the actual experiment was made, but no matter). I went down to the church again about other matters after I had made this sketch, and finding it hanging up (for it was a “proposed” window, and the sketch was hung in the church to catch the shy subscriber), I said, “Let's try and see if we can't tell how the window would look in its place.”



I piled up the chairs together as well as I could, and, bolstering the thing up with bassocks and so forth in the brightest light of the nave, I retired to such a distance that the sketch just covered the open space of the window. The chancel happened to be dark, being lighted only with that one large window; and of course the walls round it were about the darkest bits in the church; and the effect of my paper sketch in the full light of the nave, projected upon its place in the chancel, was startling, even to me, who am constantly practising these little "dodges": it positively looked almost like the thing in its place. And to show the value of the experiment I may relate that when I said to the architect who was with me, "I know what the window wants," he replied, "More blue"; and I said, "Precisely." Now I think that was distinctly getting a step nearer to one's conditions. It was not quite so good as having the window in its place and out again (I've done that before now, merely to see how it looked), but it was the next best to it; and this was mainly because one saw it in its place. It might be a good window enough in itself, but that was not quite enough; one wants it to be quite suitable to its surroundings; and the church being of a warm dark buff stone, and the chancel being very dark, everything pointed to it as a special chance for the glorious mystery of "more blue," a thing that is rather rare as an opportunity, and as choice as it is rare.

There is almost always some simple expedient to meet every case. Now here is another example. I have an altar-piece to paint: it has to be done while the altar is being made, and while the chapel is being built which is to contain it. Now what is to be done? No chance for anything here except a studio picture. Well, one must do one's best. I go down to the chapel as soon as it is roofed in, get the carpenter to put me up a lath frame in the place the panel is to occupy, stretch a sheet of paper upon it and study the lights, take some paint and roughly try colours upon it. Here they are. Crude? So they should be; they do not look crude where I painted them, though; but who would ever think of doing such colour as that in a studio? There it was, you see—not quite all one wanted, but some of it. The "handkerchief on a stick."

Here is one more example, if I am not wearying you. It is from a roof I lately painted, and of which I show you some reproductions here; and though this involved other questions, more perhaps, than colour, I quote it as exemplifying the value of constant experiment, seeing that in this instance I ran a great risk of coming to grief, because it did not occur to me to make the experiment till rather late in the day. I had taken the idea of "The sparrow hath found her 'an house, and the swallow a nest," &c., as the motive for my work, and I had conceived a rather novel, and perhaps rather risky, treatment of the roof as a mass of swallows in flight. The place was far away in Scotland, and the time very, very short. It was already September, and the swallows were departing; so I rushed into the paper work, making my studies from nature, setting out the panels, and making the arrangements and groupings before I had asked myself in more than a general way whether the thing was right for its distance. I knew the place already well, having worked there before; and no doubt I had in my mind an instinct of the fitness of things, which seemed to supply the place of experiment, and perhaps to some extent did so, and was really guiding me, unconsciously to myself. Still, when the danger occurred to me, it was with a thrill of trepidation that I made the experiment. The means for it were handy, as I have never failed to find them. I found that my own house from basement to top ceiling was exactly the height of the chapel. I therefore made and painted this specimen, put it on a stick, and got someone to hold it against the top ceiling while I looked at it from below up the well of the staircase. It was with a gasp of relief that I found it to be exactly right, but also found that had the place been ten feet lower the scheme would have been doomed, for the effect would have been unbearable so near the eye.

I hope I am not going too far away from what is expected of me in thus giving you a bare inventory of these little tricks of the trade. To me they are the very essence of my practice; each one has been bought by dear experience, or been taught me, as I conceive, by great good fortune; and it has seemed to me better to speak about these practical hints in dealing with colour problems than to attempt vague and theoretical general statements of colour principles. I shall therefore trouble you with a few more, though the first I shall mention is almost of the nature of a principle, and I am more and more convinced of its truth as such, and that is the rule of using dark schemes of colour in dark places. I believe the converse also is partially, though less emphatically, true. Dainty colour in a well-lighted building I think might often be the wiser choice, though I am far from saying that rich colour may not be used; but in low light there is no "may"; in my opinion it must be used, and a scheme of light colour must not. The treatment of such a building with light colours does not succeed in making the building look bright, but it does succeed, with a vengeance, in making the colours look dull, and to all the disappointment of our artistic sense is added the chagrin of a defeated purpose. I lately had to paint a fresco in a very dark chapel. I may, perhaps, be allowed to call your attention to it—the little mortuary chapel at St. Alban's, Holborn—and I was kindly allowed to choose the colour for the walls to suit my work. I indicated a deep russet red. Well, I was obliged to be away at the critical time, and for one reason or other the colour did not suit. I called in a friend who has made plain colour for walls quite a speciality, and in the end, by his advice, we glazed it down with alizarine crimson—a colour so terrifically strong that one double colour-box tube painted the whole chapel. People said, "Won't it make it dark?" My friend's reply was, in effect, "Your timid compromises can only make it dingy; this *may* 'make it solemn,'" which, to my mind, it exactly succeeded in doing. The moral of that is the wisdom of frankly accepting the conditions of the case and not trying to fight them.

There is another experiment which is, perhaps, not often practicable, but I have made it with advantage, and it may be worth mentioning. The case that occurred was this: I had to do a good deal of painted decoration in a building which was lighted by plain glazed windows, for which, however, I knew that stained glass was to be substituted. In fact, I was already putting in the first window, and this gave me the opportunity of finding out, to some extent, what alteration would take place in the lighting of the church when the rest were done. I got some cheap butter-cloth (one penny a yard, I think it is), and by hanging it over one of the plain glazed windows, side by side with the stained one, it was quite easy to find how many thicknesses were needed to equalise the light of the two. As a matter of fact, one thickness exactly did it, for stained glass takes away less light than one might suppose, and so, by just tacking up a thickness of muslin over the rest, I got my effect of light. Not only so, but by putting in one light of the stained window and veiling the bare opening of the other with the muslin, I was enabled to get, for future use, the valuable knowledge of the relation of my veil both to stained glass of the depth I was then using, and also to the plain glazing of the next window, with which I was also able to compare it. Now, I am quite sure that in the preparation of a building for colour treatment it must often happen that some such experiment as this would be of extreme value and help, and quite an easy thing to make. I should fancy that the knowledge of the relation between some simple material and all the various forms of glazing must be a thing which would often come in very handy to the architect planning a subtle effect of lighting. This question of the glazing of a building, which, if we consider the matter, really mainly governs the two enormously important questions of its lighting and its colour, appears to me hardly to receive the attention it deserves. Too often it seems as if the architect was content with glazing his building with the ordinary plain diamonds or oblongs—which are generally confessedly temporary—and then handing it



over to the owners, or trustees for the time being, to play with from that date to the end of the chapter. It is not an unknown thing to find, hanging up in the vestry of a church, a "design" for the future stained glazing--aye, or the complete decoration, done by some enterprising firm, who had smelt out the opportunity and got round the parson. It seems to me extraordinary that architects should not leave, from the very outset, some indication of their wishes and intentions on a subject which, if it has not in it to be the "making" of his building—for one may suppose it has merits which are independent of such embellishment—has certainly the potentiality of completely marring it.

My chief reason for alluding to this—may I call it?—negligence on the part of architects is that I feel at every sentence that I need some apology for continuing what I have called this inventory of these little tricks of my trade, and I want to call your attention to yet another one, which really seems so obvious that one would feel the need of excuse for troubling an audience with it, were it not that the arts which depend upon these things were left so unaccountably to take care of themselves. Here are some sketches of windows; you are probably used to seeing such things on paper. Well, here they are in glass.

I think they get a step nearer to the thing itself. They cannot forecast it rigidly—no sketch can or should—but they form a help towards the work to be done and an invaluable memorandum of it when done. Perhaps that is their greatest use, for by comparing them with the window when finished one has a permanent record of what combinations have been used, and may remember which have been most successful and are most worth repeating, developing, and carrying further in subsequent work.

I will venture to try your indulgent patience, gentlemen, with one more little object lesson; and in this case I can, happily, draw my moral from nature, and I have therefore kept it till the last to take as a sugar-plum after all this talk about myself and my ways, the taste of which I can only hope is more agreeable to your ears than I find it on my lips. Here is a handful of the sea-beach, taken quite haphazard exactly opposite the esplanade of a large watering-place in North Wales. I will not mention the name, because I am going to be so censorious as to remark that the aim of its builders appears to have been that the town should, as nearly as might be managed, have the appearance of being built of mud. The houses are chiefly of stone about the colour of the bed of an estuary at low tide, and the remainder of pebble-dash, carefully made to match the colour of the stone; and, wandering along the shore with this dainty and gay mosaic at my feet, I wondered whether amongst the hills from which these stones were washed down to the beach there were no masses of the same large enough to pay for the quarrying and capable of mitigating the intolerable dullness at my side. For it is to be remembered how small an added note is enough to enrich the harmony: the little chequers of flint, how they charm the grey stone tower into life without any loss to its dignity; and, where the grace and lightness of the style suggest even more gaiety as permissible, how flint and stone both rejoice at welcoming the friendly spots of red brick in some Eastern Counties tower. And in connection with this subject I will remark upon a resource of which, I think, architects fail to take full advantage, and that is the varieties which exist in any one material itself. In answer to this criticism, especially when I have made it with regard to roofing materials, my architect friends assure me that it is very difficult to get the proprietors of quarries to let them have slates less carefully assorted into batches of matched colour. Nature mixes the stone, and that is equal to saying that it is more beautiful mixed; but the unsympathetic commercial mind, whose training has been such as to make the only ideals those of exactitude and precision, will not be happy except in sending out batches of what I believe is known as "excellent building material," well matched to sample. Yet I cannot but think that if enough architects would combine they could soon "change all that,"

for it is also a maxim of the commercial mind that demand creates supply, and to this principle I think an appeal might surely be made with success.

I do not know whether there exists any collection or museum of materials used in building, or anything like a guide to them in writing. Both perhaps might have some use, though there would in the case of either be no doubt the attendant danger of trusting too much to the guidance of things presented under different conditions from those in which they will be used; but I have often rather wondered at the rarity with which anything of the kind is seen in an architect's office, where one would expect to find a few of his pet materials, if only as mementoes and memoranda of his past work. Some slabs of this or of that; some rough sketch model of them in combination. A sketch in glass, or a few specimens of the material; ah! or a few cases of butterflies, or shells, or plates of bird and flower, to keep one in touch with the teachings of the only teacher. We painters should not then feel, on entering your working-rooms, as if an architect's practice of his art consisted in staring at a sheet of Whatman's paper from ten till two, and, after a mild colour interval (let us call it) of lunch, staring at another sheet from three to five, and then going home to well-earned dinner and repose.

Ah, well, this of course is exaggeration, and I would not be fantastic. I recognise, too, the value and dignity of your great constructive problems, and I know that they must be thought out by law and rule, of which the natural instruments no doubt are pencil and paper. They are the backbone of your work on which all else hangs together. But I think we must regret not seeing it more often, more thoughtfully, and more sensitively clothed with the lovely garments of colour and texture which the works of Nature never fail to wear, and wish that you more seldom gathered your ideal from the builded or written records of the past, and then, sitting down to pencil and paper, by sheer force of rule and law compelled them to come out, and that you wandered more often (and more leisurely perhaps) into the highways and the hedges, and—I will not say compelled, but allowed them to come in. All this is architecture from a painter's point of view, and a suggestion of applying to it rather more of a painter's method. I think some good might be gained by an infusion of these into present practice. We wish your methods were more sympathetic and more plastic, and that, in dealing with the multitudinous phases and chances of a building where every step of its progress teems with suggestions, you were more at liberty to accept these as they arise, and mould and modify your work in response to them. "Mould and modify!" "Modify all the conditions of working them," you will say; "how about the contract?" "Well," I answer, "I wish you could modify that—don't you?" "How about the builder?" "Well, I wish you could modify him." "And the client?" "Well, sometimes don't you yourself wish that you could modify him?"

I acknowledge, therefore, that I am talking of ideals; but we must work towards ideals if our work is to be worth its salt, and not go round and round contentedly in the dull track of the immediately possible. Any effort to improve must surely nowadays take into account the contingency of *large* change; we must allow that the conditions of building, "jerry" and otherwise, at present are in many respects far indeed from those which obtained in the great ages of architecture.

In our aspirations after colour, then, and after better things generally, permit me, in farewell, to suggest to you, as directions in which change and fresh effort might lie:—

More experiment in proportion to the paper work, and the treatment of the latter as merely the sketch, and the building as the picture.

The founding of colour schemes upon nature.

The frank acceptance of conditions.



The practice of working more on the spot, and less in a central office.

The use of local materials in all country building.

More attention to tint, texture, and also what we painters speak of as "quality" in the treatment of surfaces painted in plain colour or stained.

The use, even in small quantities perhaps, of a more varied range of materials. Even the geological pursuit of these, and the quarrying perhaps of fresh ones, the collecting of specimens for reference in some central depôt—in fact, the formation of a small museum.

And the endeavour to create, in the ordinary trade, a supply of material less rigidly assorted, both as to size and tint.

And as to the conditions which impose themselves upon you from without, let me wish you, as time goes on (and it seems to me that it is much in your own hands to forward them), more elastic forms of contract, and new and more human relations with client and with colleague; more intimate technical knowledge of the minor crafts, that you may set out a scheme in which they take a fitter, though not necessarily a larger, part; more dependence upon your specialist craftsmen for carrying it into serious being; and a more dependable race of craftsmen to depend upon—more human, less commercial. And, lastly, a new race of clients, less prepared to look upon the building of their houses as a matter of strict business arrangement only, and to regard any show of enthusiasm or sentiment with suspicion as probably a cover for the lack of capacity; but whose own temperament, rather, and wishes will give you the opportunity of going for your inspiration more to the fields and woods, the hills and streams, and making your building, as it were, a natural growth of the open air, the smell of the soil, the largeness of the sunshine, the sound of birds and waters, and the thoughts and needs of those who have chosen to build their own nest or shrine among them.

That, perhaps, is enough to work for; and we may leave as food for our dreaming the thought of a time when a large land, peopled with a race so minded, shall employ these principles—"*Usui Civium, Decorum Urbium*"—in the building of some great city of the time to come which shall be the reflection of its breadth and strength.

#### DISCUSSION OF THE FOREGOING PAPERS.

Mr. ASTON WEBB, F.S.A., *Vice-President*, in the Chair.

PROFESSOR AITCHISON [F.], A.R.A., felt convinced that everyone present would only be too ready to return their hearty thanks to the two gentlemen who had given them these most interesting papers on Colour—a subject that was dear to all Englishmen. Might he be pardoned for saying that lovely colour was his own particular passion, and that he always looked on the Mediæval, Renaissance, and Saracen artists of glorious stained glass as possessing almost divine attributes, for they "dissolve me into ecstasies" and bring all heaven before mine eyes? Doubtless those who were happily possessed of a similar passion looked with adoration on magnificent stained glass both here and abroad. In France, Italy, and the East there were splendid specimens of coloured glass. The windows of Chartres, he thought, were the finest things that had ever been done, though those in the aisles of the choir of Canterbury were very magnificent; there were a few fine windows at Cologne—not the modern ones. There were some at Strassburg, and there

were magnificent windows of rare colours in the cathedral at Florence and in the mosques of Cairo, not to speak of the Persian glass at the Suleimanyeh at Constantinople, that would exalt all who loved colour into raptures. Mr. Ricardo had pointed out how they might get beautiful colour in their buildings at no great additional cost, and showed them some fine specimens of coloured tiles, both plain and with patterns. Bas-reliefs of glazed and coloured bricks were used in Persia more than two thousand years ago; so the invention was not new. Twenty-five years ago the speaker advocated their use in London and the large manufacturing towns, as being not only more beautiful and more healthful, but in the end more economical, than paint. These glazed bricks must of course be made to withstand the climate; but that being given, they could be perpetually washed, instead of coats of drab paint being laid on every few years. M. Charles Garnier's vision of Paris in the future had been so often quoted in that room that most

of them must remember it; but his prophecy had not yet been fulfilled, that when all the buildings of Paris were externally decorated with marble, mosaic, enamel, and gold, the whole population would have their clothes made also of splendid material to complete the gamut of colour. One of the great things of course would be to secure variety and contrast of colour in the buildings, so as to render each street and square harmonious and delightful. London would certainly look very different if it were flaming with purple and gold instead of being begrimed with dust and dingy black. Enamelled tiles, unfortunately, would not at present stand the climate when used outside, though every device that could be thought of had been tried to make them stand. There was one building in Oxford Street—a restaurant he thought—which had not been mentioned; it was faced with coloured and enamelled terra-cotta, and apparently had stood very well. The main colours used were a sage green and a dull gold, and the effect was harmonious; still, it hardly did justice to the material by its lack of splendour. Very delightful harmonies might be got by the judicious use of any sober colours. It was the genius of the artist and not the splendour of the colour that would charm the beholder. Mr. Whall's Paper was as interesting as it was amusing; but the difficulty was to put his suggestions into practice. He (the speaker) agreed that in a few instances architects would like to have a new sort of client, a new sort of builder, and a new sort of workman, although he had had much reason to be thankful to them all—and, he might even add, a new sort of architect, for, speaking for himself, he should like to be much better. The architect who mainly looked on his sheet of paper was rather to be sympathised with than upbraided; the poor fellow must eat and be clothed, and pay his rent and taxes; besides, his perpetually being on his job was of no use unless he could persuade his client to have his walls put up temporarily so that the architect might harmonise the colour. The architect could hardly match an excellent cartoon except at an enormous expenditure of time, trouble, and expense. He was afraid that there were very few clients who would let the architect harmonise the colours on the spot, even if he did it gratuitously and had the necessary materials on the ground, for the expense would be great; but if the necessary materials had to come from all parts of the country, he felt confident he would be a very rare client indeed who would allow his architect to incur any such expenditure. Marbles, as a rule, made most delightful harmonies, although one could go wrong; but they would not stand the climate, and in London mostly became mere masses of soot. M. Charles Garnier might have been right when he said that marble, even when it was decayed, always looked well—like a gentleman out-at-elbows, and not like

a clodhopper in his best clothes; but that was in Paris, where wood was mainly burnt. No one now who even claimed the name of architect would try to get the colour and tone of his building uniform; but the difficulty was to get harmonious variations without increasing the expense. The bit of sea-beach that Mr. Whall had brought was charming, but it was not easy of application. One must render one's wall with mortar, and stick in the pebbles by hand. Colour, except in the large masses of walling, &c., was, he thought, the painter's business and not the architect's; though colouring was often undertaken by architects. Broken tints and tones were advantageous, especially for grounds when the ornament on them was uniform. But there were difficulties in the way. He once had some grounds tried for colour on which there was to be a gold pattern, and after having the room painted it occurred to him that the ground would look better if it were broken instead of being flat; and he got the foreman-painter to smear a wet piece with a duster, and told him to finish the rest so. However, he always found the wall painted flat. On remonstrating, the foreman, who seemed an intelligent fellow, and was doing it himself, said: "Well, sir, you know this is rather 'a hard thing to ask of a foreman-painter, to smear his paint on with a rag. It will ruin me 'if I do it. Painters will say, 'This chap calls 'his-self a painter, but he can only smear paint 'on with a rag.' " He (the speaker), however, succeeded by telling the painter that he could say Professor Aitchison was a maniac, and would have it done that way. The subject was too vast to enlarge upon, as he had already trespassed on their time.

Mr. H. HEATHCOTE STATHAM [F.], in seconding the vote of thanks, observed that Mr. Ricardo had commenced by saying that he was putting things strongly, in order to encourage them to argue. He (the speaker) would therefore be excused if he made one or two reflections a little questioning the length to which Mr. Ricardo had gone in his Paper. He himself had a sort of passion for colour in architecture, but he always noticed when people read a Paper on Colour in Architecture that they began by saying that nothing else was worth consideration. Mr. Ricardo had asked, What was the good of the cornices and the other modelled features in architecture? He (the speaker) did not think it necessary to take that ground in order to recommend colour. He could only say that he found a good deal of the modelled detail in their streets very interesting. Mr. Ricardo observed that people went all the way to Pistoja to see Robbia's coloured terra-cotta frieze, but that they passed by unremarked the terra-cotta frieze at Heath's hat-shop. Mr. Ricardo evidently did not pass it unremarked himself, or he would not have made that observation. He (the speaker) never went along Oxford Street without finding a



great deal of pleasure from seeing that frieze. On the other hand, with all reverence to the memory of a great artist, it was, he thought, a question whether Robbia's naturalistic coloured friezes were not somewhat gewgaw in effect. Some of them, he thought, were not sufficiently quiescent, and approached rather too much to realistic representation to combine well with architecture. Mr. Ricardo had referred to the Exhibition of Furniture at Barnard's Inn, which showed that, with colour, mouldings could be dispensed with. That was only one illustration of a fact that one saw running all through ancient architecture. In a hot country, where colour had full effect, they always found flat architecture, and little mouldings, and, wherever there were any, the mouldings were generally bad. Nearly all the mouldings of Indian architecture, and most of the Saracenic ones, were bad. It was when they depended upon form that they got well-designed mouldings. That was only one illustration with regard to the furniture that went through everything; shadow and colour fought with each other. When they used mouldings they depended upon shadow for their effect; they did not so much want colour, because that was liable to interfere with the shadow effect. Another impression he carried away from the same Furniture Exhibition was that if one went with an idea of buying furniture from an æsthetic Society which made it well, one was also expected to pay a fancy price for it; he saw chairs at thirty shillings which he was sure one could get elsewhere for fifteen. With regard to the mosaics at St. Paul's Cathedral, he thought the work was a splendid success, except that some of the details were rather too small to see from below. There was only this question, whether it was not a little too good for St. Paul's in a certain sense. He did not mean for St. Paul's in its general design, but for the class of detail and for the texture. The detail of St. Paul's, it must be admitted, was not very good, and the general character of the building was rather hard and flat; and it struck him that the system Mr. Richmond had employed of bedding his mosaics, so as to produce that rich and almost woolly-looking surface, however beautiful in itself, looked rather out of place in a Renaissance building like St. Paul's; it seemed to belong rather to Byzantine architecture. As to the use of coloured tiles in architecture, the French architects had been very much bitten with that lately; but they did not use them in broad masses, they used them in little bits, put in panels of coloured tiles, stuck over the windows, little spots of colour. Was that the best way of doing it or not? He should be almost inclined to say that if they used constructive polychromy they should mass the colours as much as possible, avoiding the spotted effect of putting little bits of strong colour in the midst of uncoloured materials. He should like to put a note of interrogation to the very strong admi-

ration which was expressed for some of Mr. Butterfield's constructive polychromy. St. Mary's Church near Torquay was delightful; but he should not like to see young architects imitating the manner of Keble College. In process of time it might tone down, but it seemed to him that at present it wanted repose. If they had much architecture of that kind, they would be always feeling in a fidget as they walked along the streets. Mr. Whall's Paper was one of the most interesting ever read at the Institute, because it told so much about the practical working out of the problem by the decorative artist, and the process of his work. With regard to the growing system of painting mural decoration in the artist's studio and then having it fixed up, that, he believed, came from France; and it was one of the evil effects of the enormous scale of the building which the French had for their Annual Exhibitions. He had noticed the practice increasing during the last five or six years, that painters who had formerly painted a great picture in the building now painted it on canvas; they put it into an immense frame, they found room to hang it there, and the result was that they painted it for the Exhibition and not for its place. There was one most flagrant example in the last "New Salon" exhibition by that very clever painter M. Lhermitte, who painted a picture for one of the Hôtel de Ville rooms, representing the markets at Paris. It was simply an enormous *genre* picture. It was not flat; it had no decorative line. It was a crowd of figures in a market realistically painted, and hung up to produce a sensation in the exhibition. He thought it a most fatal thing that that should be accepted as decorative painting, and Mr. Whall's observations on that point should be borne in mind and emphasised by them all. Was the experiment of holding a brick six feet away from one, to see the effect of the same colour one hundred yards off in a larger space, quite to be relied upon? Mr. Whall, he noticed, did refer to something called "aerial perspective." They might also refer to the texture. He should think the texture of the brick would hardly give them the texture of the wall one hundred feet off. The experiments of the windows were, no doubt, exceedingly interesting. He was sure, however, they would never forget the story of the gentleman who selected his upright hangings by putting them on the floor of his office. That was a most practical lesson. Neither should they forget the bit of the sea-beach; but that was a lesson which appealed really, he thought, not to architects, who did not require it, but rather to the speculative builder, who went in for those dull cement buildings, and filled a watering-place with them. Mr. Whall, he thought, was not quite fair to the architects in saying that when he went into their offices he found them looking at white paper with no colour in their surroundings. He (the speaker) in going to archi-

teets' offices found a very large number of specimens of coloured materials hung up. To mention one instance, every time he visited Professor Aitchison's study he amused himself with looking at the framed bits of mosaic on the walls; and there were a good many offices where interesting specimens of coloured materials and decorative work would be found, and from which, no doubt, their owners derived inspiration. Mr. Whall must have gone into the wrong offices. All would agree, however, that the Papers were most interesting and suggestive, very original both in the thoughts and the way in which they were put.

MR. JOHN BRETT, A.R.A., was afraid that Mr. Whall's gloriously coloured city would not occur until the world was cold and dead. Passing that by, he would confine his remarks to one or two preliminary principles. In the first place, one must separate in one's mind the two different sorts of colour that were available in architecture. The first was specific colour, or the actual natural colour of the materials with which they worked. The second sort of colour available was applied colour. Applied colour required a totally different treatment. Broadly speaking, specific colour only was available for the outside, and applied colour only for the inside, of a building. There were beautiful examples of both to refer to, so that it was not a matter of speculation. So far as specific colour was concerned, they had happily a beautiful example of the application of it to the inside. He should not speak of the outside just at present, because it was so obvious that anything they put outside their buildings would be invisible in the course of a few years on account of the dirt. London was always likely to be a dirty city. It was founded on London Clay, the filthiest colour he knew, and that would probably prevail over all their endeavours to make London beautiful outside, even if they cured the soot, which they were not likely to do in their time. But he had lived so long in London that he felt the outside did not matter so much, if they only made the inside beautiful. Even if they could make the outside beautiful the rain and the wind and the sunshine would soon bleach it. They might therefore dismiss the outside. They had got a specimen of the treatment of the inside of buildings with specific colour at Kensington, in the house of the late Lord Leighton. There they saw an effect of which there was no question—everybody was completely agreed about it—that the result was exquisite; and it depended upon fine marbles, very beautiful Oriental tiles, and an admirable mosaic frieze. Those three specimens of specific colour were shown in the interior, and they were probably as enduring as the world. If they wanted to construct a public building they could not do better than begin by studying that great example of modern art in colour. With regard to applied colour, they had only to refer to the Vatican. There the effect

was entirely dependent upon a superficial tint laid on in the form of tempera. If they covered a surface with tempera they might be certain of one thing—that they could make it hideous. They could achieve this by making it uniform. If they got a bucket of colour and laid it on as smoothly as possible, they would succeed in producing an effect which would be deadly; the eye would very soon be fatigued and not notice it, but if it did really notice it, it would be annoyed unspeakably by the wearisome uniformity. Uniformity of colour was very much more painful than no colour at all. That was the fundamental principle in applied colour. It was really prohibited because of the expense. If it were laid on with a whitewash brush and a pail, of course it was exceedingly cheap; just as cheap as whitewash; but, as Charles Keene beautifully showed, "It is not the expense of the paint, but the man's time a-laying of it on." Where colour was not minutely graduated and delicately modulated it ceased to have any effect on one; if it had any effect it must be painful. Another objection to it was that it prevented the wall from reflecting light, or at least hindered it very much. The interior decoration was what he took most interest in; but the architect usually omitted to consider that a wall was primarily useful as a reflector of light. "How am I to light this dirty dwelling?" was what he asked himself. "We want to keep out the rain and wind. Never mind how it is lighted; let the man who lives in it go about in the dark." But by chance a man might have something worth looking at inside, and a taste for that might spread. In domestic architecture they might say that there was no call for colour at all. The man had only a very temporary hold on the dwelling. He put up with it for a short time in his life, hoping to improve upon it by removing to some other house. There were very few people in town who owned their houses, and therefore they took no interest in them at all. They went to the City and attended to their business, and came home and ate their dinner and slept their sleep. That was their life! That was the present fashion of art in London! But there was no occasion for that to go on. There was no reason why they should not abolish some of the wretched attempts at tempera colour by which the inside world was disfigured. At present they must set their face against the workman and the whitewash brush, because no dwelling could be made civilised by that means. If they could not afford to employ an artist, then employ the builder only, and let things take their chance. There was one thing to be said in favour of applied colour—that age and a moderate amount of dirt were altogether favourable to its beauty. A new building, one might say, was an incomplete building. Age was wanted to stain and modify and fade the crude colour generally laid on. The Englishman knew very well that



he could not get a house fit to live in that would look at all beautiful. He must have colour, so he hangs filthy draperies about his dwelling. That was what was to be seen in the inside of a modern civilised man's house. One did not see any of his architecture. He could not stand that; it was intolerable. That was no exaggeration. All the houses one went into were in a perpetual state of danger from fire because of the little bits of rag hung about them. Then the unfortunate dweller in towns had recourse to pictures, as his only chance, if a man of taste. The picture-maker in fact had ousted the architect, who did all he could to foil the painter, because he made the walls so dark, and so broken up, and so bad, that they could not hang a picture at all in one house in fifty. The art of lighting the interior, so far as he knew, had never been considered at all. It was forgotten that the people would suffer as well as the pictures. They might mend the lighting of London houses, but they did not know how, and the architect kept it a dead secret. The owner's cash had to be spent, and it was a pity he should squander it on pictures instead of panelling, and he could prevent this by cutting up the wall-spaces and cross-lighting them. It was a fatal difficulty in regard to the advancement of architecture, that if a man did not care about his house he could move out of it. He did not see any way of getting over that difficulty. With regard to the colour of the Vatican, the first time he was there the loggia had not been touched. The background of the arabesques was a delicate ultramarine, mottled and stained with age and weather, damp and fungi, and the pawing of the Italians through centuries. That was the condition when he first saw the loggia of the Vatican, and anything more beautiful he had never seen. But in the early days of Victor Emmanuel he had seen a man beginning work, to restore the background of the loggia; and the delicate ultramarine was being carefully painted out with a good dense coat of Reckitt's blue! The arabesques were hideously ugly in his opinion, but their outline was so much blurred by the effect of time and fading that they were hardly traceable, and therefore what remained of them possessed a great charm. But if one investigated them or traced them, one could see that they were wretched specimens of design. There were fifty men in a Society to which he belonged who could design far better ornaments than those. Of course, it was all Raphael! He did not suppose, however, that Raphael had anything to do with it. It was done under Raphael's direction, and probably done as cheaply as he could get it done! He would recommend them to go and study the Arab Hall at the late Lord Leighton's house in Kensington, because they had nothing equal to it in England, and he did not know anything to equal it anywhere. Monreale in Sicily was perhaps the finest

specimen he knew of mosaic, but the Arab Hall did not depend so much on mosaic as on marble. It was impossible to deal with so large a subject in so short a time, and one got confused in trying to get things into order on the spot; but if he had had time to write them down, his notes might have been of use.

THE CHAIRMAN said they were all agreed that they had had most interesting Papers from Mr. Ricardo and Mr. Whall. Mr. Ricardo had recommended the use of glazed bricks as a means of introducing colour to the outside of their buildings, and he had also had the courage of his opinions, and had adopted that means with very successful results. The earlier attempts at glazed surfaces, made by Sir Gilbert Scott and many others who had a wish to introduce colours into their buildings, seemed to him (the Chairman) to fail because they were introduced in bands or in patches, as Mr. Statham had said; and in time, while the vitrified surface remained bright, the other surface took a layer of soot and dirt. Mr. Ricardo had adopted the principle of facing the whole wall with a vitrified surface, which had, he thought, a much better result. Mr. Whall had kindly shown architects as painters saw them. He could not but hope that the architect who looked at the patterns on the floor which were to hang on the wall was the result of a poetic imagination. They should all like, of course, experimentally to put their buildings up first, and to vary and improve them when they were up, but that they could not do. It was the first difficulty they had, and one which a painter had not, that when once their work was up they were practically obliged to leave it there. All their work, from the beginning of their lives to the end, was there, to speak of their failures—which they all knew they made. They could not paint it out, but could only endeavour to do better in each new building entrusted to them. He was sure they would all join most heartily in thanking Mr. Ricardo and Mr. Whall for the practical and useful Papers they had given them. The thanks of the Meeting were also due to Messrs. James Powell & Sons, Messrs. De Morgan & Co., Messrs. W. B. Simpson & Sons, and Messrs. Joseph Cliff & Sons, who had kindly lent specimens of glazed bricks, tiles, &c., to illustrate the Papers.

MR. CHRISTOPHER WHALL, in acknowledging the vote of thanks on his own and Mr. Ricardo's behalf, said for his own Paper that in reading it over in print to an audience—a very different thing from writing it in the train, as he happened to have done—he felt conscious that he was adopting rather an attitude of criticism; but he must shelter himself behind Mr. Ricardo's remark that his words were intended to be provocative, and he was glad they had proved provocative of such an interesting discussion and so much valuable criticism. Mr. Statham's remark about the brick at six feet only applied to the little

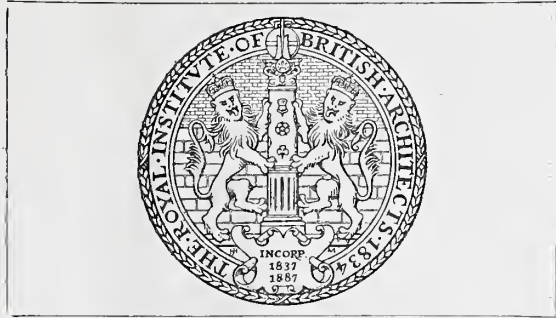
rough experiment where he (the speaker) took the arbitrary length of six feet as an easy thing to remember; but in using that principle of holding the thing up he not only tried it at one particular range and in one particular relation to distance of the actual object, but in every one where he could try it, varying his own position, his own distance from his brick, and also varying the distance between that brick and what it was to cover in the landscape, so as to get, not only one experiment, but half a dozen. Of course one could not put up a wall and knock it down again—he meant any length or breadth of building—but as a means of knowing what one was doing, he thought it a suggestion of value to take a little of the material down and see how it looked upon the landscape.

The following communication has since been received from Mr. Christopher Whall:—

In the conversation which took place on Monday after the reading and discussion of our Papers (which I regard as, perhaps, the most useful part of the evening), my remark about green slate and red brick or sandstone was much criticised; and I should like to point out, first, that I ought to have said “in immediate juxtaposition to,” rather than “in conjunction with”; and, secondly, I should also limit my objection to cases where these materials are used in *sole*, or almost *sole*, conjunction with each other. I had in mind buildings, such as one frequently sees, where the reddest of red brick or sandstone, and the greenest of green slate, both carefully assorted, come close on to each other, with no third note of colour.

Scotland Yard was quoted to me; “surely I “liked Scotland Yard?” Surely I do; but do I not remember there bandings or dressings of cream-white stone breaking the red brick? Do I not remember dormers innumerable breaking the green roof, and bringing the greys of the glass and the zinc or lead into it? Is there not something in the way of a deep cornice? Lead caps to the towers? And I have in memory a great deep gap of sombre shadow, somehow breaking into the roof, and always seeming, to my mind, intended, beside whatever may be its actual use, for the poetic suggestion of the terrors of the law and “horrible black hole.”

My memory seems to recall these things. I am sure some of them are there. Is it possible, too, that the slates or the bricks, or both, may be varied in colour or size, and not carefully matched? I think it possible; but, even without that, the features I have mentioned are quite sufficient to dispel all my objection, and make that sturdy building, keeping its watch over the peace of the town, an excellent example of my contention that you can change almost any discord into a harmony by adding notes; one most valuable way of doing this being, to my mind, the use of unmatched material.



9, CONDUIT STREET, LONDON, W., 23rd April 1896.

## CHRONICLE.

### THE COUNCIL: 1896-97.

Nominations by the Council now in office.

Pursuant to the terms and provisions of By-law 30, a list of members whom the Council have nominated to the offices of President, Vice-Presidents, Honorary Secretary, Members of Council, and Associate-Members of Council, for the ensuing year of office, was issued on Monday, 20th inst. The list is as follows:—

PRESIDENT.—Professor George Aitchison, A.R.A., *Past Vice-President*.

VICE-PRESIDENTS.—Alexander Graham, F.S.A., *Vice-President*; Aston Webb, F.S.A., *Vice-President*; Ernest George, *Vice-President*; and William Milner Fawcett, M.A. Cantab., F.S.A.

HON. SECRETARY.—William Emerson.

MEMBERS OF COUNCIL.—John Belcher; Thomas Blashill; John McKean Brydon; William Douglas Caröe, M.A. Cantab., F.S.A.; Arthur Cates, *Past Vice-President*; Thomas William Cutler; Campbell Douglas (Glasgow), *Past Vice-President*; Henry Louis Florence; John Alfred Gotch, F.S.A. (Kettering); Edward Augustus Gruning; Charles Hadfield (Sheffield); Edwin Thomas Hall; Benjamin Ingelow; Edward William Mountford; Joseph Oswald (Northern Architectural Association); John Slater, B.A. Lond.; Percival Gordon Smith; Richard Phené Spiers, F.S.A.; Henry Heathcote Statham; Paul Waterhouse, M.A. Oxon.; Ralph Selden Wornum; William Young.

ASSOCIATE-MEMBERS OF COUNCIL.—William H. Atkin-Berry; Arthur Smyth Flower, M.A. Oxon., F.S.A.; Thomas Miller Rickman, F.S.A.

The third division (c), containing the names of the Presidents of nine Allied Societies (a maximum of nine to be returned), will be given in the Voting Paper to be issued after the Annual General Meeting, which takes place on Monday, 4th prox.

The fourth division (d), containing the name of a Fellow or an Associate as representative of the Architectural Association (London), is filled by that of Mr. Beresford Pite [A.].

### THE STANDING COMMITTEES: 1896-97.

Pursuant to the terms and provisions of By-law 49, lists of Fellows and Associates whom the Standing Committees suggest as suitable and



eligible to serve on their respective Committees for the ensuing year of office were issued on Monday, 20th inst. These lists are composed as follows :—

#### Nominations : Art Standing Committee.

FELLOWS.—John Macvicar Anderson; John Belcher; Edward Ingress Bell; Sir Arthur Blomfield, A.R.A.; James Brooks; John McKean Brydon; William Douglas Caröe, M.A., F.S.A.; Ernest George; Edward William Mountford; Alfred Waterhouse, R.A.; William Samuel Weatherley; Ralph Selden Wornum; William Young.

ASSOCIATES.—John Begg; Owen Fleming; James Sive-wright Gibson; Henry Thomas Hare; George Kenyon; Beresford Pite; William Henry Romaine-Walker; George Campbell Sherrin.

#### Nominations : Literature Standing Committee.

FELLOWS.—Henry Louis Florence; Alexander Graham, F.S.A.; John Hebb; Benjamin Ingelow; Sydney Smirke; Richard Phené Spiers, F.S.A.; Arthur Edmund Street, M.A. Oxon.; Charles Harrison Townsend; William Frederick Unsworth; Paul Waterhouse, M.A. Oxon.

ASSOCIATES.—Arthur Thomas Bolton; Banister Flight Fletcher; Arthur Smyth Flower, M.A. Oxon., F.S.A.; John Tavenor Perry; Andrew Noble Prentice; Ravenscroft Elsey Smith; Leslie Waterhouse, M.A. Cantab.; Percy Scott Worthington, M.A. Oxon.

#### Nominations : Practice Standing Committee.\*

FELLOWS.—Graham Clifford Awdry; Thomas Batterbury; Henry Cowell Boyes; Franc Sadleir Brereton; Samuel Flint Clarkson; Edward Augustus Gruning; Edwin Thomas Hall; Joseph Stanislaus Hansom; Thomas Harris; Alexander Henry Kersey; Joseph Douglass Mathews; Walter Hilton Nash; Lacy William Ridge; Edmund Woodthorpe, M.A. Oxon.

ASSOCIATES.—William H. Atkin-Berry; Francis Thomas Wilberforce Goldsmith; Frederick Henry Appleton Hardcastle; Henry Thomas Hare; George Richards Julian; Thomas Edward Mundy; Augustus William Tanner; Robert Stark Wilkinson.

#### Nominations : Science Standing Committee.

FELLOWS.—Lewis Angell, M.Inst.C.E.; Arthur Baker, R.C.A.; Henry Dawson; Frederic Richard Farrow; Professor Banister Fletcher; William Warlow Gwyther; John Salmon Quilter; Herbert Duncan Searles-Wood; Percival Gordon Smith; Lewis Solomon; William Charles Street, Assoc.Inst.C.E.; Benjamin Tabberer.

ASSOCIATES.—Henry William Burrows; Bruce John Capell; Max. Clarke; Robert Langton Cole; Bernard John Dicksee; Matthew Garbutt, Assoc.M.Inst.C.E.; George Pearson; Ernest William Malpas Wonnacott; Thomas Locke Worthington.

#### The late Joaquim Possidonio Narcizo da Silva

[Hon. Corr. M. Lisbon].

Authentic news of the death, on the 24th ult., of the Portuguese architect, Joaquim da Silva, only reached the Institute about the 10th inst. Founder and President of the Royal Society of Portuguese Architects and Archæologists, and

Architect to the King of Portugal, his long and successful career has been of the most brilliant description, from its commencement in 1825, when, as a pupil of Huyot and Charles Percier, he was admitted to the Ecole des Beaux-Arts, Paris, until his death at Lisbon, in the ninetieth year of his age. Returning to Portugal towards the end of 1830, the Chamber of Deputies, Lisbon, was erected from his designs as early as 1834; and from that year until 1879 he was occupied with works of restoration at the Royal Palaces of Necessidades, Belem, Cintra, &c., and with the erection of a new Royal Palace at Lisbon, on the opposite bank of the Tagus. An excellent account of the deceased Master appears in *L'Architecture* (18th inst.), the journal of the Société Centrale des Architectes Français, of which he was a Membre-correspondant. He was also an Associé-Etranger of the Institut de France, and possessed the literary faculty in no small degree, as his contributions to the subject of Portuguese architecture suffice to prove. Some of his letters to the Institute, always written in French, have been preserved; and two, addressed in July 1864 to the then President, Professor Donaldson, are attached to his Nomination Paper, which was signed by Arthur Ashpitel, Owen Jones, and Ewan Christian, on the 4th April 1864, the election having taken place a fortnight later. Joaquim da Silva had consequently been just 32 years an Honorary Corresponding Member, and was, in fact, the distinguished *doyen* of that important class.

#### Brickwork Tests [p. 358].

Mr. F. Walker, who took part in the discussion at the Meeting of the 30th ult. on the Science Committee's Brickwork Tests, sends the following correction :—In looking leisurely over this matter I find that my statement at the Meeting of the 30th ult. with respect to the difference of area between the 14"×14" pier and the 18"×18" pier, also the difference in the number of vertical joints of the respective piers, is not correct. The 18"×18" pier is reduced  $39\frac{1}{2}$  per cent. its area, and the vertical joints  $55\frac{2}{3}$  per cent. their number, instead of 25 per cent. and 40 per cent. as reported in my remarks—the difference between the reduction of area and the reduction of joints, as stated and in reality, being 15 and 16 respectively.

#### The Fund for Experimental Research [p. 362].

The Science Standing Committee may be congratulated on having evidently obtained the good opinion of a well-known member of the London County Council, who has more than once taken part in the discussions at General Meetings of the Institute. Dr. Longstaff has made a munificent donation of £50 to the fund now being raised in aid of the researches so happily commenced by the Science Standing Committee, as recent reports and

\* In the Nomination Paper issued to members on Monday, 20th inst., the names of Mr. Gruning and Mr. Hall were, by a regrettable accident, omitted from the list of Fellows nominated for the Practice Standing Committee; and the names of Mr. Hare and Mr. A. W. Tanner from the list of Associates.

papers [pp. 333-358] testify. Mr. Moncrieff, whose Paper on "Beams, Columns, and Roof-trusses," read in March 1895 before the Northern Architectural Association, appeared in the JOURNAL [Vol. II. p. 428], has, since the recent appeal, sent two guineas on behalf of his firm, Messrs. Sandeman and Moncrieff, of Newcastle; Mr. Walter Spiers and Mr. C. B. Arding, one guinea each; and Mr. Aston Webb, three guineas. The complete list of donors, with the amounts of their respective contributions, is as follows:—

	£	s.	d.
Aldwinckle [F.]: T. W. ....	5	5	0
Anderson [F.]: J. Macvicar .....	10	10	0
Arding: C. B. ....	1	1	0
Beazley & Burrows [A.]: Messrs. ....	1	1	0
Clarke [A.]: Max .....	1	1	0
Cuxson [A.]: G. Pryce .....	1	1	0
Cutler [F.]: T. W. ....	3	3	0
Dawson [F.]: Henry .....	3	3	0
Dicksee [A.]: Bernard .....	1	1	0
Fletcher [F.]: Professor Banister .....	1	1	0
Gwyther [F.]: W. W. ....	2	2	0
Harston [F.]: C. ....	3	3	0
Hooper [A.]: Francis .....	1	1	0
Leonard [H.A.]: Hugh .....	5	5	0
Longstaff: Dr. ....	50	0	0
Pearson [A.]: George. ....	1	1	0
Quilter [F.]: J. S. ....	2	2	0
Reade [H.A.] & Reilly; Messrs. ....	1	1	0
Sandeman & Moncrieff: Messrs. ....	2	2	0
Searles Wood [F.]: H. D. ....	1	1	0
Smith [F.]: P. Gordon .....	3	3	0
Solomon [F.]: Lewis .....	1	1	0
Spiers [A.]: Walter L. ....	1	1	0
Street [F.]: William C. ....	1	1	0
Tanner [F.]: Henry .....	2	2	0
Unwin [H.A.]: Professor .....	2	2	0
Webb: Aston .....	3	3	0
White [F.]: William H. ....	1	1	0
Young [F.]: Keith D. ....	1	1	0

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The amount in hand is about £35, and subscriptions may be sent to "The Secretary R.I.B.A.," at the office of the Institute.

The First Edition of Alberti's great Work [pp. 145-57].

The benefactor asked for in January [p. 183] has been found, and the Florentine Vitruvius is at length very fairly represented in the Library, which has just been enriched with a copy of *De Re Aedificatoria* as Alberti wrote it, in Latin. This copy, recently acquired by Mr. Arthur Cates, and presented by him to the Institute, appears to have once belonged to the Dukes of Devonshire—inherited perhaps from the great Earl of Burlington—and to have been sold, in 1815, because it was a duplicate. It is known that the original edition appeared after Alberti's death, which occurred about 1476, and was published in 1485; although, by a misprint, it bears at the end the date of 1085, in Latin words.

#### Books received from Publishers.

*The Ecclesiastical Architecture of Scotland from the Earliest Christian Times to the Seventeenth Century*, by

David MacGibbon and Thomas Ross. Vol. I. To be completed in three volumes. [Edinburgh: David Douglas.]

*Edinburgh: Picturesque Notes by Robert Louis Stevenson.* With illustrations by T. Hamilton Crawford, Member of the Royal Scottish Water Colour Society. [London: Seeley & Co., Ltd.]

*The Temple of Deir el Bahari*, being the first of a series of yearly numbers giving a general description of the temple, each containing from twenty to thirty plates, with an explanatory text. [London: The Egypt Exploration Fund.]

*Old Cornish Crosses.* By A. G. Langdon and J. R. Allen. [Truro: Joseph Pollard.]

*The Principles of Art as illustrated by Examples in the Ruskin Museum at Sheffield, with passages, by permission, from the Writings of John Ruskin*, compiled by William White. [London: George Allen.]

*Fors Clavigera*, Vol. I., consisting of letters to the Workmen and Labourers of Great Britain, by John Ruskin. [London: George Allen.]

*A History of Architecture for the Student, Craftsman, and Amateur, being a comparative view of the Historical Styles from the Earliest Period*, by Professor Banister Fletcher and Banister F. Fletcher. [London: B. T. Batsford.]

*Dilapidations, Law and Practice.* By Alfred T. Macer, Member of the Surveyors' Institution. Legal matter revised by Sidney Wright, M.A., Barrister-at-Law. [London: Estates Gazette Office.]

#### Indexes of Building Journals.

Referring to the memorandum under this head [p. 285], the Title and Index of *The Architect*, vol. xxviii., has been obligingly supplied by Mr. Max. Clarke [A.], and the set of Indexes to vols. i.-liv. is now bound and available for use.

Several more Titles and Indexes of *The Building News* have been supplied by the kindness of Mr. Hugh Stannus [F.]. Those only of vols. i.-xiv. are now wanting for *The Building News* and for *The British Architect*.

## REVIEWS. XXXIX.

(106)

### BUILDING LAW.

[SECOND NOTICE.]\*

*The Law relating to Building; with Precedents of Building Leases and Contracts, and other Forms connected with Building, and the Statute Law relating to Building; with Notes and Cases under the various sections. Third Edition.* By His Honour Judge Emden, assisted by Henry Johnston, Esq., Barrister-at-Law. 8s. Lond. 1895. Price 14s. 6d. net; postage 6d. extra. [Messrs. Knight & Co., 90, Fleet Street, E.C.]

The architect's professional interest in this treatise as a book of reference extends of course more or less throughout the whole volume, but there may be said to be an expressly personal interest involved in the consideration of what is discovered to be the law as regards his duties and authority. He must distinctly understand, then, that "the public profession of an art" (not with

\* Professor Kerr's first notice [No. 105] of this work appeared on pp. 291-93.



the capital A in this case) "is a representation "and undertaking to all the world" (mark the weight of these words) that the person so doing "possesses the requisite skill and ability," including "an implied warranty" that he is "reasonably "competent to the task he undertakes." He "is, "moreover, responsible, not only for himself, but "for those he may employ under him;" that is to say, for his assistants, his inspector of building, possibly his measuring surveyor, and still more possibly his clerk of works. As regards the clerk of works, even when, for example, a municipal corporation, constitutionally fond of the exercise of patronage, claims the right of directly appointing that functionary by a process commencing with public advertisement and terminating with a casting vote of the chair, still the architect, whose duty it is to give him directions, and to see that they are properly carried out, may find himself unexpectedly responsible for the incompetence, intemperance, or what not, of a subordinate whom all the while he cannot displace. The moral to be drawn from this is the usual one: that the architect as a man of business must have his wits about him, and keep a law-book at hand.

Our authors further point out that "the most "satisfactory mode of determining whether the "architect has exercised proper skill is to show by "evidence whether a majority, or even a moiety, "out of a given number of skilful and experienced "persons would have acted as he has done." But this dictum, no doubt quite logical in theory, in practice may only prove how helpless an architect with a troublesome client may find himself to be. What is meant by "skilful and experienced "persons"? All witnesses are primarily equal in the cold searchlight of the law; one learned and popular judge is even said to have formulated the case in this pleasant way:—All witnesses are liars, and expert witnesses are ditto more forcibly expressed. So our plaintiff-client, finding it convenient to allege something of the nature of negligence, puts up his three witnesses according to rule; and the architect-defendant puts up his three. Obviously three and three are theoretically equal "moieties," but it is well known in such cases that the moiety which happens to carry the lighter burden of solid knowledge, with the more breezy or airy assurance, will, by law of human nature, generally get the advantage with a jury, and perhaps with a judge; and the result is obvious. Indeed, there is a case in point. The plaintiff's first witness was a surveyor of the briefless order; the second was a house-agent, who called himself an architect on the ground that his deceased brother and partner had been so brought up; the third was some equally reliable authority, and equally self confident. Against these let us suppose the defendant to call three somewhat heavy "men of eminence," whose manners are

considered to be too dictatorial, and their natural prejudice too palpable. The impartial judge leaves it to the sagacious jury "to find their own "way through the usual conflict of evidence "amongst experts"; and it is enough to say that they find it.

As regards the architect's authority, he is a "general agent" of his client, and "the extent of "his authority (as between his employer and third "parties) is to be measured by the extent of his "usual employment." This, however, we may conclude, must be determined by the custom of agency in trading, rather than by any precept of mere professional usage; and here it is possible that the architect might find himself occasionally in considerable difficulty, especially in certain localities where the manners and customs of trading agents seem to be developing new and sometimes inconvenient principles. Again, "in "the absence of specific instructions, it is the "architect's duty to pursue the accustomed course, "which, if reasonable, the Court will support." But even this does not help us much; for "the "glorious uncertainty of the law" may still read the words "if reasonable" with a melancholy smile. Neither does this condition of things cease when we discover that "where the limits of the "architect's authority are clearly set out, as is "usually the case, by express terms in the agreement between the employer and the builder, the "authority must be strictly followed, as an employer will not be liable for the acts of the "architect unless the authority be duly pursued "by him;" this being a euphemistic warning not to give unauthorised orders for extras, or for the administration of "provided amounts." In practice it may therefore be said that the well-meaning and perfectly upright average architect undoubtedly takes a good deal of risk upon himself in respect of many of his doings in the indisputable interest of the work, and of his client. But how can it be otherwise? The complexity of an architect's daily duties as commander-in-chief, in even a minor undertaking, is such that, without perfect confidence being placed in his discretion and honour, to say nothing of his honesty, his business certainly could not be carried on. To regard him, therefore, as a lawyer might be apt to do, as a mere administrative officer, supervising the execution of a rigid frigid contract, such as the delivery of a cargo of coals might be, or the manufacture of a consignment of boots and shoes, however convenient in theory, is in practice quite beside the mark; building cannot be done by sample—except perhaps by the Jerry fraternity under the surveyorship of a house-agent—nor even by plans and specification, without daily guidance and constant reconsideration of minutiae; and it is the hold that the architect happens fortunately and remarkably to have upon the confidence of the

builder as well as the employer that comes into view from day to day as an absolute essential in the maintenance of his authority. In most other professions it takes two agents to secure justice; in this profession one is sufficient.

An architect has to be careful in delegating his authority, for "where a man (the client) employs "an agent (the architect)," and, we may add, where the employed (the builder) so recognises him, "relying upon his peculiar aptitude for the "work entrusted to him, it is not competent to "that person (the architect) to delegate the trust "to another." Our friends "the estate-agents, "surveyors, and valuers" are notorious for their disregard of this principle, delegating, for example, without the slightest scruple, and indeed surreptitiously, such an important legal task as the assessment of a difficult case of dilapidations to a casual and quite irresponsible office-clerk, as if it were the scheduling of a commonplace lot of furniture or the measurement of a stack of wood; but we do not hear of an architect of standing delegating his duties in any way, except openly to recognised assistants, or to an accepted measuring surveyor for the special task. It need scarcely be said, however, that it is dangerous to sign the orders or decisions of his delegates without sufficient personal investigation, or even to give a qualified assistant *carte blanche* so as to dispense with constant reference to himself. In mere trading business it is generally sufficient if the work is performed; but in architectural business there is more of an express reliance upon the talent and experience of a professed specialist experienced in the "mystery" (as it used to be called) of his art and science.

The important practical question of an architect's position as a decider of differences between the builder and the employer—virtually between the builder and the architect himself—loses none of its importance when the technical principles of law are introduced; and a good deal of space is occupied in the work before us in expounding the decisions of the Courts on various problems that have been brought before them bearing directly or indirectly upon this subject. Architects do not generally understand, nor do builders, that the architect who is allowed in the usual manner to see fair play between the two parties to a building contract, commonly does so in a way that is somewhat primitive and innocent. A Paper was read to the Institute not long ago by a member of the Bar, which may not have been so carefully taken into consideration as it deserved. In a word, the mysterious distinction was sought to be explained which the Courts draw between "arbitration" and "valuation," and an architect ought to know better than he usually does the somewhat surprising way in which this distinction may come to affect his own proceedings.

What he generally supposes is that he is simply called upon to "settle" on fair terms any misgivings about the work or the payment; but if the question should be asked—which it fortunately never is in everyday business—whether he is acting as an "arbitrator" or as a "valuer," he will say that he knows no difference between the two. The lawyers, however, recognise a very great difference. Speaking in general terms, when he is an arbitrator, he is a representative of "the Court," for the occasion a sort of officer of the great Temple of Justice in the Strand, responsible to the judicial authorities there for the due observance of all their formalities, and liable to have his decision set aside more or less scornfully, if it is found to be (ceremonially) "irregular." When, on the other hand, he is a valuer, his position is much more potent; it is indeed despotic; no authority at Temple Bar can even look at his decrees; he may award, perhaps by the most patent mistake of a copying clerk, ten thousand pounds instead of tenpence, and the judges will only cheerfully remark that they have "no jurisdiction." Consequently, when the most experienced of practical architects, in pursuance of the well-known stipulations of the ordinary building contract, refuses to approve certain materials or workmanship—provided there is no new-fashioned "arbitration clause"—he is an "arbitrator" under the Arbitration Act, and may be threatened with an appeal to the lawyers; but when the least experienced of young gentlemen (speaking reverentially of them all) "measures up the extras," he is not an arbitrator at all, but a "valuer," and whatever amount he declares to be the balance due is to be accepted on one side and paid on the other without any further inquiry and without even a word of explanation. There is here indicated what must be called a weak point in all processes of arbitration—there is no provision for correction. When the Lord Chief Justice himself delivers a judgment, it may be appealed against; and even the Court of Appeal may be appealed against in its turn; indeed, to show how very substantial is this principle, it sometimes seems as if great lawyers almost chuckled over the opportunity of under-rating each other's intellectual powers. But when a palpable misadventure occurs in the result of a lay reference, the same high authorities will with still greater complacency remind a complainant that he has chosen his own course of settlement, and cannot with any reason object to take the consequences. He has preferred to dispense with the Courts of Law, and can scarcely expect those tribunals to help him out of the pit in which he has thus landed himself. Accordingly, the well-known cynical maxim, that an arbitrator should never give reasons for his decision, comes into play with a particularly selfish kind of force; the arbitrator, for the sake of his own peace, carefully



avoids any indication of what is passing in his mind, and in drawing his written award confines himself to such phraseology as shall the most effectually conceal his motives. It is to the credit of our architects that in their ordinary business of directing the builder they do not avail themselves of any such rule. Their reasons are plainly stated, and, if necessary, argued out; in fact, with all the safeguards of an "arbitration clause," it is scarcely ever found that builders appeal against their decision—simply, we may venture to say, because of the straightforwardness of it. So also, when the measuring surveyor comes in, as the architect's delegate, to make up the accounts, it is still the custom to allow the builder every facility for taking his own part. But we must not suppose that an architect is bound by law, however much in honour, to act thus generously; on the contrary, as a "valuer" duly appointed between the parties by the well-known clause in the building agreement, he is legally as despotic as a Czar; he can do his work, or get no matter whom to do it in his name, as badly as he pleases, and, if he has what some would call the good sense to keep his reasons to himself, can deliver his "valuation," duly stamped, with the serene assurance that not even an earthquake can shake it. Therefore let it be always borne in mind, first, that the appointment of an architect, or of a surveyor, or the acceptance of his appointment, in view of such potentialities, is not a thing to be done at random; secondly, that in all cases of reference the selection of the referee is half the battle; thirdly, that the selection, or more especially the acceptance, of a "valuer" is an especially hazardous measure; and, fourthly, it may be added that the position of an umpire is still more irresponsible than that of the most irresponsible referee.

ROBERT KERR.

(107)

#### SOME POPULAR TREATISES.

*Old Chester: etched and described by H. Hovell Crickmore.* 8o. Lond. 1895. Price 7s. 6d. net. [Messrs. J. M. Dent & Co., 69, Great Eastern Street, E.C.]

*Venice.* By Daniel Pidgeon, F.R.G.S., Assoc. Inst. C.E. 8o. Lond. 1895. Price 3s. 6d. [Messrs. Kegan Paul, Trench, Trübner, & Co., Paternoster House, Charing Cross Road, W.C.]

*An Elementary History of Art—Architecture, Sculpture, Painting.* By Mrs. Arthur Bell (N. D'Anvers). 4th edit., newly revised by the author. 8o. Lond. 1895. Price 10s. 6d. [Messrs. Sampson Low, Marston, & Co., St. Dunstan's House, Fetter Lane, E.C.]

Mr. H. Hovell Crickmore has described Old Chester in a very interesting book which he has himself illustrated with a score of capital etchings. The style is perhaps too uniformly familiar; the plates show a consummate artist more in love with his subject than the letterpress would sometimes lead to suppose; or, perhaps, Mr. Crickmore has tried to hide under a smile the depth of

his feelings at seeing quaint, lovely, old sixteenth-century Chester pass away so rapidly.

It is for all lovers of their country and of their native place—and I suppose Mr. Crickmore to be a Cestrian—a cause of sadness to witness how Time sweeps away the old places which we loved, and which were so intimately connected with our history. And what a gulf such a disappearance opens between succeeding generations! We cling to those places with a sort of passionate fondness; we try to restore them—and I am glad that Mr. Crickmore should approve of many of the restorations which have taken place in Chester. But restorations remind one of Jeannot, who had a new handle put to his knife and then a new blade, and was fond of believing that it was still the same knife. We try to deceive ourselves, but it will soon be to such books as Mr. Crickmore's that one will have to go to study and admire "the veterans that have seen so many changes" and withstood the wear and tear of so many "seasons."

Mr. Crickmore has many curious stories to relate of the worthies who lived in Chester in days gone by. The government of Chester was a perilous post to hold, and the place must have been an unpleasant one to live in. And yet people seemed to thrive in it. Business went on and flourished in the midst of intestine wars, and of that long and bloody struggle with the Welsh. By the way, our author is perhaps a little too hard on the hillmen. They were a brave and warlike race, anxious, above all, to protect the independence of their country, and they deserve our respect. The Stanleys were for a long time the ruling family in Chester. Their coat-of-arms is still to be seen with the three armed legs, the cognisance of the Earls of Derby as kings in Man. Mr. Crickmore makes a mistake in believing that the sovereignty of Man was sold by the Stanleys to the Crown in the time of the second Charles, not long after the Restoration. The sovereignty of the island was only purchased in 1765 for 70,000*l.* from Charlotte, daughter of James, Duke of Athole, heir-general to the 10th Earl of Derby, who had died in 1736 without issue male. I confess that I cannot agree with Mr. Crickmore in his appreciation of Margaret of Anjou's father, good King René. He speaks well of Margaret, and of the dauntless courage with which she upheld the cause of the last of the Lancastrians. Hapless queen! well could she write on her breviary the opening words of the Ecclesiastes: "Vanity of vanities, all is vanity." But René was not a frivolous, easy, lute-playing, trivial personage. He was no mean poet. He was a good and valiant soldier, a true and loving husband, and in the south of France his name is still a by-word.

I cannot follow Mr. Crickmore in his rambles about Chester. His chapters on the city walls,

on St. John's Church, and the Cathedral are most interesting. "A long technical disquisition upon "the architectural beauties and peculiarities of "the Cathedral is not a part of my plan," says he, but he gives enough details to guide the ever-increasing class of thoughtful amateurs. The last chapter of the book is most fitly devoted to Hawarden Castle, where in the evening of his life dwells another of those veterans who have seen, and in this case made, so many changes.

It is, even in these days of quick and easy travelling, a long journey from Chester to Venice. Surely no visit to Venice could be made with a better cicerone than Mr. Pidgeon. The writer is an engineer by profession. He is also somewhat of a poet. He speaks learnedly of architecture, and his chapter on Venetian art is excellent. This little book contains in a few pages much food for thought. Mr. Pidgeon speaks highly of Giovanni Bellini, of whom Kingsley said: "A noble, "simple, brave, godly man was old John Bellini, "and never lost his head, though princes were "flattering him and snobs following him with "shouts and blessings for his noble pictures, as "if he had been a man sent from God Himself; "as indeed he was, as all great painters are; for "who but God makes beauty?" The chapter on St. Mark's is of deep interest. Mr. Pidgeon has also heard in Venice "the everlasting note of sadness." Of the beautiful Venetian palaces one is now occupied by Salviati's glass furnaces and showrooms; in another the Murano Glass Company carry on a similar business; a third is crowded with girls weaving lace for the house of Jesurum, and so on, while not a few are now hotels.

In her *Elementary History of Art* Mrs. Arthur Bell devotes but a few lines to St. Mark's, and two pages only to Venetian art. It is the fate of hand-books that they must condense in 300 pages the materials of a large library, and so leave much untold. However, Mrs. Bell has fulfilled her task with great care and obvious success, as is shown by the book having reached a fourth edition. I regret that Mrs. Bell should not have given more importance to the various schools of Art in France. Her list of French architects is sadly deficient. In her chapter on English architecture the writer speaks well of that wonderful building, Henry VII.'s Chapel, of which Washington Irving said, "Stone seems, by the cunning "labour of the chisel, to have been robbed of its "weight and density, suspended aloft as if by "magic, and the fretted roof achieved with the "wonderful minuteness and airy security of a "cobweb." But I do not think that Mrs. Bell is justified in calling St. Paul's the finest *Protestant* cathedral in the world, if it were only for this reason: that at the time of its construction the Court inclined towards Romanism, and caused Sir Christopher Wren to alter his original plan, according to which the building was to have the

form of a Greek cross, with an enormous cupola resting on eight pillars, and to adopt the actual plan, a long choir being necessary to the Romish ceremonials. I know for my part of no Protestant church which reminds me more of a Roman Catholic building than St. Paul's.

Mrs. Bell will do well to rectify the spelling of the names of a number of French sculptors. It cannot really be said that M. Guillaume ever broke loose from the trammels of convention, and treated his sculptural subjects in a realistic manner. Everybody now agrees to place Philippe de Champaigne in the French school of Painting. In the contemporary German school the glorious Adolf Menzel deserves more than a mere mention. Mrs. Bell is a little too hard on David, and I do not think that Ingres was ever overrated. The spelling of the names of numerous French painters should also be corrected. But these remarks are in nowise meant to depreciate the value of a book which shows considerable research, and may prove most useful as a kind of stepping-stone to further and deeper studies.

A. BARTHÉLEMY.

(108)

#### THE LAW OF LIGHT.

*A Digest of the Law of Light, with an Appendix of Statutes, Forms, and Plans. By Edward Stanley Roscoe, Barrister-at-Law. Third edition. 8s. Lond. 1895. Price 3s. 6d. [Messrs. Reeves & Turner, 100, Chancery Lane.]*

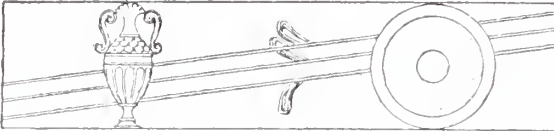
The third edition of this little book—well printed, well illustrated by practical examples, with a useful appendix and an index—sufficiently explains the law of light as it exists at the present day, and it differentiates this law from any which may attach to air. The two are clearly divisible, and it may be well, in the future, to speak of ordinary cases as "light" cases, rather than as "light and air" cases. Perhaps one of the most important cases recently decided is that of *Wheaton v. Maple*.\*

In this case the question arose as to whether the Prescription Act ran against the Crown and its lessees. It had been previously decided that it did not run against the Crown, but this was an instance in which Messrs. Maple, as Crown lessees, considered that they were, for the purposes of a "light" action, practically the Crown. Mr. Justice Kekewich thought differently, but the Court of Appeal agreed with the defence set up by Messrs. Maple. Therefore the law, as it now stands, enables the Crown and its lessees to carry up a new building to any *legal* height, I presume (*i.e.* the height allowed by the London Building Act 1894), without risk of successful interference on the part of any person whose light may be injured by the new building.

WM. WOODWARD.

\* The R.I.B.A. JOURNAL, Vol. IX. N.S. 487.





## MINUTES. XII.

At the Twelfth General Meeting (Ordinary) of the Session, held on Monday, 20th April 1896, at 8 p.m., Mr. Aston Webb, F.S.A., *Vice-President*, in the Chair, with 22 Fellows (including 10 members of the Council), 22 Associates, 2 Hon. Associates, and several visitors, the Minutes of the Meeting held 30th March 1896 [p. 364] were taken as read and signed as correct.

The Hon. Secretary announced the decease of the Chevalier J. da Silva, *Hon. Corr. Member*, Portugal; and of Arthur Billing, *Fellow*.

Papers by Mr. Halsey Ricardo, Architect, and Mr. Christopher Whall, Painter, entitled *THE ARCHITECT'S USE OF COLOUR*, were read by the authors, and discussed. A vote of thanks having been passed, the proceedings terminated at 10 p.m.

## ARCHITECTS' BENEVOLENT SOCIETY.

## Response to Mr. Penrose's Appeal [p. 330].

The Assistant-Secretary of the Architects' Benevolent Society reports that the Hon. Treasurer (Mr. Arthur Cates) has received the following sums of money in response to the recent appeal made by the President of the Society (as well as of the Institute) on behalf of the Society:—

	DONATION.			SUBSCRIPTION.		
	£	s.	d.	£	s.	d.
Anderson: J. Macvicar.....	10	10	0			
Baikie: Samuel.....		5	0			
†Baker: Charles.....				1	1	0
†Barrow: E. R. ....				10	0	
†Bays: Edwin.....				10	0	
†Bibby: Peter.....				1	1	0
†Biram: Frank S. ....				1	1	0
†Bolton: Arthur T.....	2	2	0	3	3	0
Boyes: H. C. ....	5	5	0			
Brandon: David, F.S.A. ....	5	0	0			
Broughton: J. W. ....		5	0			
†Brown: A. B. ....				10	0	
†Bulmer: G. B. ....				1	1	0
Butcher: J. E. ....	1	1	0	1	1	0
Cappon: T. M. ....	1	1	0			
†Careless: T. J. ....				1	1	0
Carøe: W. D., M.A., F.S.A. ...	2	2	0			
*Cates: Arthur.....	100	0	0	5	5	0
Ditto (Balance of Accounts, "Dictionary of Architecture")	25	0	0			
†Champneys: Basil, B.A. ....				2	2	0
†Cobham: G. W. ....				5	0	
*Dunn: John.....				3	3	0
†Elgood: Frank M.....				1	1	0
†Frere: E. C. ....				2	2	0
†Goodacre: R. J. & J.....				1	1	0
*Grimthorpe: The Rt. Hon. Lord				2	2	0
†Grover: Geo. F.....				1	1	0
†Harrison: Stockdale.....				1	1	0
Heazell: W. A. ....	1	1	0			
*Hine: G. T. ....	25	0	0	5	5	0
Hooper: T. Rowland.....	1	1	0			
†Hope: T. C. ....				1	1	0
Ingelow: Benjamin.....	5	5	0			
James: Samuel T. T. ....	1	1	0			
*King: Zeph.....				2	2	0
†Lanyon: John.....				1	1	0
*Lee: John T.....				2	2	0
†Lethbridge: George.....				2	2	0

	DONATION.			SUBSCRIPTION.		
	£	s.	d.	£	s.	d.
Lewis: Prof. T. Hayter, F.S.A.	50	0	0			
†Lynn: Wm. Henry.....				5	5	0
†McGibbon: Alexander.....				5	0	
†Mackland: John.....				1	1	0
Mansell: T. H. ....	1	1	0			
†Marshall: Charles J. ....				1	1	0
*Martineau: E. H. ....				3	3	0
Nottingham Architectural Society	5	5	0			
†Parkinson: Joseph.....				1	1	0
*Pearson: J. L., R.A.....	10	10	0	5	5	0
*Penrose: F. C. ....				2	2	0
†Pilkington: Ernest M. S.....				2	2	0
†Plumbe: Rowland.....				1	1	0
†Ponting: C. E., F.S.A.....				1	1	0
Sage & Co.: F. ....	2	2	0			
†Selby: Frank.....				1	1	0
†Seth-Smith: W. H. ....				2	2	0
Shearman: Ernest C. ....	10	6				
†Siley: Abraham.....				2	0	0
Simpson: Eben.....	1	1	0			
†Smith: J. Osborn.....	10	6		10	6	
†Snell: Alfred Saxon.....	3	3	0	2	2	0
†Southall: B. N. ....				1	1	0
*Street: A. E., M.A. ....				2	2	0
†Taylor: F. S. ....				5	0	
†Teulon: Maurice B. ....				2	2	0
†Walker: T. H. W. ....				1	1	0
*Waterhouse: Alfred, R.A. ....				5	5	0
†Watson: Wm.....				1	1	0
*Woodthorpe: Edmund.....				2	2	0
†Vining: J. R. ....	1	1	0			
Z.....		10	6			
	£261	12	6	£89	16	6

\* Subscription increased to this amount. † New annual subscriber.

## ALLIED SOCIETIES.

## OFFICERS AND COUNCILS 1896-97.

## The Leeds and Yorkshire Society.

President, Mr. W. Watson (Wakefield); Vice-Presidents, Messrs. W. S. Braithwaite and W. A. Hobson; Hon. Treasurer, Mr. W. H. Thorp [F.]; Hon. Librarian, Mr. W. H. Beevers [A.]; Hon. Secretary, Mr. Francis W. Bedford [A.]. Members of Council: Messrs. H. B. Buckley, W. Carby Hall [A.], Jas. Ledingham [F.], T. Butler Wilson [F.], Chas. B. Howdill [A.], and G. F. Danby.

## The Northern Association.

President, Mr. Archibald M. Dunn; Vice-President, Mr. F. W. Rich; Hon. Treasurer, Mr. J. T. Cackett [F.]; Hon. Secretary, Mr. A. B. Plummer [F.]; Hon. Solicitor, Mr. H. C. Harvey; Hon. Librarian, Mr. H. C. Charlewood [A.]. Members of Council: Messrs. G. T. Brown (Hon. Local Secretary for Sunderland), F. E. Caws [F.], R. B. Dick, C. S. Errington [A.], W. Glover, W. S. Hicks, J. H. Morton [F.] (Hon. Local Secretary for S. Shields), J. Oswald [F.], T. Reay, and W. J. Taylor [F.].

## The Leicester and Leicestershire Society.

President, Mr. Charles Baker; Council, Messrs. J. Goodacre [F.], A. H. Paget [F.], A. E. Sawday [F.], T. H. Fosbrooke, H. L. Goddard [A.], and J. W. Simpson; Treasurer, Mr. Stockdale Harrison [F.]; Hon. Secretary, Mr. S. Perkins Pick [A.].

## The Devon and Exeter Society.

President, Mr. Arnold Thorne [F.]; Vice-President, Mr. James Crocker [F.]; Council, Messrs. James Jerman [F.], Charles Cole, F. J. Commin, James Hine [F.], H. G. Luff [A.], J. M. Pinn, and E. G. Warren; Treasurer, Mr. Octavius Ralling; Hon. Secretary, Mr. Harbottle Reed



## REPORT OF THE COUNCIL FOR THE OFFICIAL YEAR 1895-96.

*Approved and adopted by the Annual General Meeting, 4th May 1896.*

Mr. ASTON WEBB, F.S.A., *Vice-President*, in the Chair.

**T**HE Council elected on the 10th June 1895 have held 23 meetings; and since the publication of the last Annual Report on the 9th May 1895, 27 meetings. These are exclusive of meetings held by Committees of the Council.

The death of Lord Leighton of Stretton, the gifted President of the Royal Academy of Arts, Royal Gold Medallist in 1894, has deprived the Institute of a distinguished member. An Hon. Associate since 1877, he was recently nominated by the Council an Hon. Fellow, and elected at the first Business Meeting of the current Session. The reminiscences of him by Mr. A. E. Street and Professor Aitchison, in the *JOURNAL*, are touching records of a great and interesting career.

Mr. Falkener, whose name was connected with early researches at Ephesus nearly fifty years ago, and whose literary and artistic works during a long life have rendered him illustrious, has been elected an Hon. Fellow.

In the course of the official year nine Fellows, of whom six were Associates, have been added to the Roll, which now numbers 594, as against 604 in May 1895; sixty-three gentlemen, of whom 15 were *Students*, have been elected Associates, increasing that class to 968, as against 921 last May. Seven Hon. Corresponding Members have been elected, namely, Alexander Wielemans and Ferdinand Fellner, of Vienna; Victor Schröter, of St. Petersburg; Hermann Josef Stübben and Friedrich Carl Heimann, of Cologne; Baron von Lecoq, of Darmstadt; and Frederick Skjold Neckelmann, of Stuttgart; but no addition has been made to the class of Hon. Associates, which now numbers 55, as against 61 last May. The question of establishing a new class of members, to be called "Craftsmen," and to include persons indirectly connected with Architecture but ineligible for admission to the class of Hon. Associates, was discussed at a Special General Meeting last July, when its further consideration was postponed.

The Students and Probationers continue to increase in number. There are now 148 Students and 778 Probationers, although during the past twelve months, in consequence of a change of date, only one series of Examinations has been held instead of the two which have hitherto taken place in the Autumn and Spring. The second series for 1895-96 is to take place in June, instead of, as heretofore, in March.

The loss to the Institute by death during the year has been:—*Fellows*: Arthur Billing, E. P. Loftus Brock, T. Chatfield Clarke, Henry Clutton (Hartwood), John Colson (Winchester), Thomas Cundy, Harry Drinkwater (Oxford), William Horton (Manchester), A. E. Johnson (Melbourne, Australia), J. T. Newman, J. P. St. Aubyn, and J. W. Trounson (Penzance); *Associates*: F. Lennox Canning (Johannesburg), E. E. Scott (Brighton), Thomas Wells, and George Wheelhouse; *Hon. Associates*: James Abernethy, a Past President of the Institution



of Civil Engineers, and George Richmond, R.A.; *Hon. Fellow*: Lord Leighton, P.R.A.; and *Hon. Corr. Members*: Emile Bœswillwald (Paris), Richard Morris Hunt (New York), Royal Gold Medallist in 1893, and J. P. N. da Silva (Lisbon).

A Preliminary Examination for admission as *Probationer* was held in London, Liverpool, and Newcastle last November, when 96 persons passed. An Intermediate Examination was held in London at the same time, when 22 Probationers qualified as *Students*. A Final Examination was held in London, Liverpool, and Bristol, when 35 persons (11 of whom were *Students*) qualified for candidature as Associate. Statistics of these examinations follow:—

Examination	Applied	Attended	Not passed	Relegated for periods	Passed and registered
Preliminary . . .	134	{ Exempted 59 }	—	26	96
Intermediate . . .	51	42	—	20	22
Final . . . . .	72	68	—	33	35

For purposes of comparison it may be desirable to state that, in the Autumn Examinations of 1894, 103 persons were registered as *Probationers*, 29 as *Students*, and 64 qualified for candidature as *Associate*; in those of 1893, 73 were registered as *Probationers*, 36 as *Students*, and 63 qualified for candidature as *Associate*. From the first Preliminary Examination, held in November 1889, there has been but a slight annual variation in the number of those who have qualified as Probationers, the fee for admission having been one guinea. From the 1st January 1896 for all those who at that date were neither Probationers nor Students, or who had not made application for admission to the Preliminary Examination, the fees have been raised: that for admission to the Preliminary being now two guineas (instead of one); for the Intermediate, three guineas (instead of two); and for the Final, four guineas (instead of three), although three out of the four guineas will still be carried forward as the candidate's entrance fee to the Class of Associates should he be elected within eighteen months from the date of passing. Moreover, candidates specially exempted by the Council from the Preliminary and Intermediate Examinations are now required to pay a fee of three guineas for admission to the Final Examination, and another three guineas as entrance fee when elected Associates.

The Ashpitel Prize for the calendar year 1895 was not awarded, none of the 61 persons who qualified during the year for candidature as Associate having sufficiently distinguished himself to merit the Prize. Instead thereof, books to the value of five guineas were presented respectively to Mr. George John Thrift Reavell [*A.*] and Mr. William Charles Waymouth [*A.*], *Probationer* 1889, *Student* 1891, and *Arthur Cates A.A. Scholar* 1892.

The retirement of Mr. Arthur Cates from the Chairmanship of the Board of Examiners (Architecture)—a step unhappily rendered necessary for reasons of health—is a matter of profound regret, which will be shared by all who have at heart the cause of architectural education, to the promotion of which he has devoted so many years' unwearied service. The Council had recently the gratification of announcing another prize offered by Mr. Cates as an inducement to care and diligence on the part of such Students as are preparing for the Final Examination; and, taking this as an earnest of his continued interest in the welfare of the Examinations, the inception and successful establishment of which were due to him, they indulge the hope that, although his active services are withdrawn, the Board of Examiners may continue to enjoy the advantage of his experience and advice.

The Council observe with much satisfaction the multiplication of facilities throughout the country for the systematic training of young men desirous of becoming architects, and it is encouraging to note the numerous instances recorded in the *KALENDAR* where the Courses of Instruction laid down have been arranged expressly to meet the requirements of the

Institute Examinations. The Council are glad to recognise in this connection the admirable scheme of study recently formulated, and now in successful operation, at the Architectural Association. The establishment of a School of Architecture and of the Applied Arts at University College, Liverpool, accompanied by the endowment of a Professorial Chair, has been followed by the creation of a Chair of Architecture at the Glasgow and West of Scotland Technical College; and there is every likelihood that at no distant date a like Professorship will be founded at the University of Edinburgh.

The Royal Gold Medal for the Promotion of Architecture was presented to Mr. James Brooks, Vice-President, last June, for his executed works as an Architect. That for the year 1896 has been awarded to Mr. Ernest George, Vice-President, for his executed works as an Architect; and notification has been received of Her Majesty's gracious approval.

The number of competitors for this year's Prizes and Studentships exceeded that of any former year. The designs and drawings submitted were generally of a high standard of excellence, and, together with those sent in by Students and Prizemen of 1895, formed an exceedingly interesting and creditable collection. The galleries on the ground-floor not being available, the resources of the Institute in the matter of hanging-room were severely taxed, and the Library had to be used for the purpose. The Annual Exhibition, open to the public from the 10th to the 20th January, attracted a large number of visitors, nearly eight hundred persons having signed the visitors' book during the nine days the drawings were on view. The Deed of Award was read to the Business Meeting of the 13th January, and it afforded the Council satisfaction that, owing to the high quality of the work submitted, they were able to bestow prizes in all the competitions. The Presentation of Prizes took place on the 20th January, when the Annual Address to Students was delivered, in the absence of the President, by Mr. Alex. Graham, Vice-President. The various designs and drawings were critically reviewed in Papers read the same evening by Messrs. William Young, Frank T. Baggallay, and Beresford Pite on behalf of the Art Standing Committee. The Essays placed first, second, and third have since been reviewed in the JOURNAL [p. 281] by Dr. Frank Granger, of Nottingham. Several of the premiated works were selected, as in former years, for exhibition at Allied Centres, including measured drawings of Hampton Court Palace by the Silver Medallist, Mr. H. P. G. Maule, *Probationer*, and those of Gedney Church by Mr. C. W. Smith, *Probationer*; the Design for an Institute of Architects by the Soane Medallist, Mr. Shekleton Balfour [A.], and those of Mr. John Anderson [A.] and Mr. E. A. Rickards, placed second and third respectively in the same competition; Drawings of Bishop Gower's Screen by the Pugin Student, Mr. C. C. Brewer; drawings of Sant' Anastasia, Verona, by the Owen Jones Student, Mr. H. C. Corlette [A.]; the Design for a Stone Bridge by Mr. H. A. Crouch [A.], Tite Prizeman; and the Design for a Band-Stand by Mr. J. H. Tonge, Grissell Prizeman. The above were accompanied by specimens of the drawings submitted by Messrs. F. M. Harvey and S. Chesney for admission to the Intermediate Examination of last November. The pamphlet of subjects for next year's Studentships and Prizes has been issued to every subscribing member at home and abroad, and the Council trust that a larger proportion even than heretofore of the younger members will compete for the valuable Prizes in their gift.

During the official year only one application has been made for a Certificate to act as District Surveyor in London, and none for that of Building Surveyor under local authorities. Mr. Harold Griffiths, of the London School Board Offices, was examined last November, and granted a Certificate of Competency to act as District Surveyor. The Statutory Board of Examiners have consequently had little occasion to meet. A Special Committee, appointed during the official year 1894-95, presented an Interim Report on the position of District Surveyors in face of the conditions imposed upon them, to which the Council referred in their last



Annual Report [Vol. II. p. 445]. Mr. Charles Fowler's resignation of the office of Chairman of the Statutory Board is a cause of regret to the Council. Mr. Fowler, who had held that position since 1884, has been a member of the Board for some twenty-seven years, his valuable services during that long period having been given with unstinted devotion.

The Secretary of State for the Home Department has appointed Mr. A. A. Hudson, Barrister-at-Law, to be a Member of the Tribunal of Appeal constituted under section 175 of the London Building Act 1894, in succession to the late Mr. Cubitt Nichols. The Tribunal consequently now consists of Mr. Hudson, appointed by the Home Secretary; Mr. Arthur Cates, appointed by the Council; and Mr. Penfold, appointed by the Council of the Surveyors' Institution. Mr. Cates has been re-elected Chairman of the Tribunal, the duties of which are both onerous and important.

Representations having been made as to the desirability of issuing Certificates of Alliance to the various Societies allied to the Institute, Certificates made out in the names of the fifteen non-Metropolitan Societies within the United Kingdom were forwarded to the respective Societies in June of last year. A similar Certificate had previously been sent, at the personal request of Mr. Horbury Hunt, then President of the Institute of Architects of New South Wales, to the headquarters of that Allied Society in Sydney.

A new "Form of Agreement and Schedule of Conditions for Building Contracts," which received the sanction of the Institute last May, was issued to members on the 25th July 1895; and the old Paper of "Heads of Conditions" was withdrawn from circulation in accordance with a Resolution of the General Meeting held 13th May 1895 [Vol. II. p. 522]. A large number of copies of the new Form has already been sold.

The appointment of a Special Committee to consider and report on Public Competitions and on matters connected therewith has been effected; also a Special Committee to consider and report on that portion of the President's Address delivered at the opening Meeting of the current Session, which was entitled "The Class of Fellows: an Appeal and a Suggestion." Numerous matters connected with the latter subject, including Memorials received, have been referred to the Special Committee.

The Council are glad to record that efforts made to place the British School of Archaeology at Athens in a better financial position than it has enjoyed since its establishment have been successful. The representations made last year and described in the Annual Report, on the subject of archaeological research in India, have again occupied the attention of the Council; and a Memorial on the subject, duly signed and sealed, has been addressed, as follows:—

*To the Right Hon. Lord George Hamilton, Her Majesty's Secretary of State for India,—*

MY LORD,—The Council of the Royal Institute of British Architects have the honour to draw your Lordship's attention to the following matter in connection with the Archaeological Survey of the North-West Provinces of India and Oudh, which is still far from complete.

In the Annual Report of the Architectural Section of the Archaeological Survey of that district for the year ending 30th June 1894, it is stated in the Programme for 1894-95 that, "according to present arrangements only one more camping season is to be devoted to archaeological researches in the Provinces, and in October 1895 the work is to stop altogether. There is so much remaining to be done that one feels diffident in sketching out the programme of this final tour. There is work enough for some years to come to occupy the attention of the department, as the greater part of its ancient buildings remain to be surveyed."

As to the cost of the work, it is stated that as only 300 Rs. (say £19) were permitted to be spent in paying the Photographic assistant, his services had to be dispensed with as soon as that sum had been expended. It also appears that the staff of draughtsmen consisted of from seven to ten men, apparently all natives, and probably not paid on a very extravagant scale. When the cost of printing, &c., has been added and the receipts from sales of the publications deducted, the net cost to the Government of India must be a mere trifle, and yet it appears that the work, in spite of its intensely interesting and important character, *is already entirely stopped*.

The Council of the Royal Institute of British Architects had the honour of pointing out to your Lordship's predecessor in office, in a memorial dated the 12th February 1894, the great importance of this work. A few more years would lead to its completion, and should the work now be stopped, it will involve, whenever the work might be started again, the training of a new staff and countless fresh difficulties. We would therefore respectfully urge that, were the Govern-

ment to reconsider this question and grant the small sum necessary for its continuation, a great boon would be conferred on the artistic and scientific world. Our only excuse for troubling your Lordship in this matter is the surpassing interest attaching to these buildings.—We have the honour, &c.

The foregoing was executed on the 2nd March, and the Council have been favoured with the following reply:—

*India Office, Whitehall, London, S.W. : 22 April 1896.*

SIR,—I am directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 3rd March enclosing a Memorial from the Council of the Royal Institute of British Architects on the subject of the closing of the operations of the Archæological Survey of India in the North-West Provinces and Oudh from the month of October next; and in reply I am to state for the information of your Council that a copy of the same has been forwarded to the Government of India for such action in the matter as they may deem advisable.—I am, Sir, your obedient Servant,

W. EMERSON, Esq., *Hon. Secretary.*

(Signed) A. GODLEY.

On the occasion of a visit to London last May of members of the Association of Architects and Engineers of Rhenish Prussia, the Council had the honour of receiving the Vice-President Stübben and a small contingent of the party. Arrangements were subsequently made for them to visit buildings of interest in the Metropolis and also Canterbury Cathedral. The rare distinction of *Grand Officier* of the Legion of Honour, conferred by the French Government upon Monsieur Charles Garnier, Royal Gold Medallist in 1886, President of the *Société Centrale des Architectes Français*, a Body between which and the Institute most cordial relations have always existed, received the warm congratulations of the Council. At a banquet given in Paris on the 7th March to celebrate the event the Council were officially represented by the Secretary of the Institute, who was staying in Paris at the time on leave of absence.

In response to representations from Allied Societies and from various members, the Council have decided to hold a Dinner of the Institute annually; and that such Dinner shall occasionally take place at one of the non-Metropolitan Centres in concert with the Allied Society of the district. Arrangements are being made to hold the Dinner this year at Manchester on Wednesday, the 20th May, the evening function to be preceded during the afternoon by a General Meeting in the rooms of the Manchester Society. The President, Mr. Penrose, will take the Chair at both Meeting and Dinner. Members have already been advised of particulars as to Dinner Tickets, &c., and the Council hope that a large company, especially from the Northern and Midland Counties, will be present on the occasion.

The Literature Standing Committee report that since their election last June they have held eight meetings, making nine altogether since the issue of the last Annual Report. They appointed Mr. Alex. Graham, F.S.A., Chairman, and Messrs. R. Elsey Smith and Arthur S. Flower, M.A., Hon. Secretaries. They desire to express their deep sense of the loss that not only the Committee but the Institute has sustained by the death of Mr. Loftus Brock.

The Committee have under consideration the extension of the use of the Loan Library to non-Metropolitan members, and steps are being taken to ascertain in what manner this desirable end may be obtained more effectually and generally than is at present the case. A Catalogue prepared by the Librarian was printed in the current issue of the *KALENDAR*, and the question of publishing it separately is being considered. The Council are most desirous of seeing the collection of works in the Loan Library increased. Members who possess books of an educational character, with the use of which they are able to dispense, may do a service to the Institute by presenting them.

The major part of the Palladio portion of the Burlington-Devonshire Collection has been bound in the seventeen original portfolios. The Committee have also had under consideration the Texier Manuscripts, relating to the Architecture of Constantinople, and have directed that two separate indices be made, viz.: (1) Of the names of the different subjects contained in the MSS., distinguishing those to which designs are attached; (2) Of the drawings.

Mr. Graham, Colonel Prendergast, and Mr. Sydney Smirke are acting as a sub-



Committee to consider and report upon the drawings and photographs in the Library and the best method of dealing with them. Meanwhile the late Mr. Nesfield's folio sketch-books are being bound in four volumes under the superintendence of Mr. R. Phenè Spiers, and the octavo sketch-books are to be placed under glass in the Library.

The following Sessional Papers arranged for by the Committee have been read:—"The Sculptured Columns of the Temple of Diana at Ephesus," by Dr. Murray [*H.A.*], on 18th November 1895; "Græco-Phœnician Architecture in Cyprus," by Dr. Max Ohnefalsch-Richter, on 16th December 1895; "Saint-Front of Périgueux, and the Domed Churches of Périgord and La Charente," by Mr. R. Phenè Spiers [*F.*], on 17th February 1896; "Saint-Pierre-ès-Liens: The Ancient Cathedral of Geneva," by M. Louis Viollier [*Hon. Corr. M.*] and Mr. Lawrence Harvey [*F.*] on 6th March. A Paper, by Mr. R. F. Chisholm [*F.*], descriptive of the Palace of Baroda, has been prepared for the General Meeting of the 18th May. A question relating to the custody of the MSS. of Sessional and other Papers, &c., not accepted for or printed in the JOURNAL has been submitted to the Committee, and proposed regulations relating to the care of such manuscripts have been considered.

The Council desire to express their appreciation of the able Papers, articles, and reviews which appear in the JOURNAL, and take the present opportunity of acknowledging their obligations to the various authors. Especially is such acknowledgment due to the authors of Papers, of sterling practical value, read before the Allied Societies, and presented for publication in the JOURNAL. Further, the Council acknowledge their indebtedness to several gentlemen who are not members of the Institute for literary contributions, notably, Professor the Rev. Dr. Sayce; Mr. James Grahame, of Glasgow; Mr. W. Arnold Jolly, Barrister-at-Law; Mr. John Leaning, F.S.I.; Mr. Henry Reilly, M.Inst.C.E.; and M. Antonin Barthélemy, who is in London collecting statistics on the subject of Education in this country. Before leaving this subject the Council would direct attention to the fact that the Library owes some of its most valued acquisitions of recent years to the JOURNAL reviews. Publishers, fully realising the value of criticism from men of recognised attainments in special subjects, send copies for notice of new issues of works on architectural, archæological, and cognate subjects; and these copies, after serving the reviewer's purpose, go to enrich the Library.

In the statement annually made by the Librarian to the Literature Committee, he reports that from 1st April 1895 to 31st March 1896 the total additions to the Reference Library amounted to 115 volumes and 64 pamphlets; and the total additions to the Loan Library 18 volumes and 4 pamphlets. Of drawings, prints, and photographs, 157 sheets and 2 volumes have been presented, exclusive of the *A.A. Sketch Book*. One medal was presented. The works purchased comprise 19 volumes and 11 pamphlets for the Reference Library, and 8 volumes for the Loan Library, together with several Parliamentary papers. The attendances of readers in the Reference Library numbered 2,377 (last year 2,838). The number of tickets (exclusive of renewals) issued for admission to the use of both the Loan and Reference Libraries was 37 (last year 83). The number of volumes issued on loan was 853 (last year 986).

Among important works purchased for the Library, special mention may be made of Ongania's magnificent monograph on St. Mark's, Venice, arrangements for the suitable binding of which have just been concluded. A rare sixteenth-century edition of Vitruvius (12mo. Florence 1513) has been purchased, the copy already in the Library being incomplete; and Baron von Le Coq [*Hon. Corr. M.*] has presented the celebrated German edition in two volumes (large 4to. Leipzig 1796), which was one of the few wanting to complete the collection of Vitruvius in the Library. The Italian translation of Alberti's *De Re Edificatoria* (4to. Venice 1565) was presented by Mr. J. J. Cole; and a well-preserved, handsomely bound copy of the original edition, published after the great Florentine's death (sm. fol. Florence 1485), has been presented by Mr. Arthur Cates. Among other rare works received during the

official year are Rossi's *Ornamenti di fabbriche antiche e moderni di Roma* (4to. Rome 1600), presented by Mr. W. A. Pite; a curious series of pamphlets collected in a volume and entitled *Frauds and Abuses at St. Paul's* (sm. 8vo. London 1712), presented by Mr. P. Gordon Smith; and Milizia's *Memorie degli architetti*, &c., presented by Mr. John Hebb. Among other valuable presents of comparatively new works the Council have pleasure in noting *Strassburg und seine Bauten*, prepared and issued by the Architects and Engineers' Association of Elsass-Lothringen; and *Köln und seine Bauten*, by the kindred Association of the Lower Rhine and Westphalia.

The Reports of the three other Standing Committees submitted to the Council, and approved by them, here follow:—

#### REPORT OF THE ART STANDING COMMITTEE.

Fourteen meetings have been held since the publication of the last report. Mr. Alfred Waterhouse, R.A., was appointed Chairman; Sir Arthur Blomfield, A.R.A., Vice-Chairman; and Messrs. Edward W. Mountford and Owen Fleming, Hon. Secretaries.

*Vauxhall Bridge*.—In compliance with a suggestion from the Bridges Committee of the London County Council, your Committee prepared a sketch design for the proposed new bridge over the Thames at Vauxhall. The design having been approved by the Council, a deputation of the Committee met the Bridges Committee upon July 17th, and, after presenting their design and fully stating their views, were cordially thanked for the trouble they had taken in the matter.

*Trinity Almshouses, Mile End, E.*—Having heard that the demolition of these buildings was threatened by the Trinity House Corporation, your Committee prepared a memorial asking the Corporation to allow them to remain. Upon the receipt of an unfavourable reply, the Committee obtained leave to appear before the Charity Commissioners at the public inquiry held to consider the proposals of the Corporation, when the President and Mr. Macvicar Anderson ably supported the protest against the destruction of the Almshouses. The decision of the Charity Commissioners is not yet announced.

*North British Railway Hotel*.—The proposal of the Railway Company to erect a mammoth hotel in Princes Street, Edinburgh, has received considerable attention from your Committee, who have endeavoured to obtain a reduction in the height of the new buildings, so as to bring the hotel more into harmony with the general architectural character of the city. Unfortunately their efforts have been unavailing.

*St. Paul's Cathedral*.—A memorial was addressed by your Committee to the Dean and Chapter of St. Paul's, pointing out that the new clock-dials on the south-west tower appeared to mar the effect of Sir Christopher Wren's design, and expressing a hope that some alteration might be made.

*Critical Report on Students' Work*.—Upon the request of the Council the Committee undertook the critical examination of the work submitted by competitors for the Prizes and Studentships 1896, and appointed Messrs. W. Young, F. T. Baggallay, and Beresford Pite as a sub-committee to prepare the reports, which were made at the Ordinary Meeting held 20th January 1896.

*St. Mary Woolnoth*.—In consequence of the renewal by the City and South London Railway Company of their proposal to demolish this church, your Committee prepared a Petition protesting against the vandalistic and unnecessary nature of the proposal. The Petition was presented to Parliament by Mr. H. C. Richards, M.P., and the matter is now under the consideration of the House of Commons.

*Sessional Papers*.—The Committee have arranged two of the Sessional Meetings. The first was held on the 3rd February, when Papers on "Wood-carving" were read by Mr. W. H. Romaine-Walker [A.], and Messrs. J. E. Knox, W. Aumonier, and W. S. Frith. Many valuable specimens of wood-carving were kindly lent by the South Kensington Authorities and others. At the second Meeting, held on the 20th April, Papers were read by Mr. Halsey Ricardo, architect, and Mr. Christopher Whall, painter, upon "The Architect's Use of Colour."

*Holborn to Strand Improvement*.—Your Committee, having considered the proposed new street from Holborn to the Strand, prepared an alternative scheme, which has been submitted for the consideration of the Improvement Committee of the London County Council. The scheme met with the approval of the County Council's officials, but was not recommended by the Improvement Committee.



Your Committee have, however, reason to hope that it will receive further consideration from the County Council, especially as a new Improvement Committee has recently been appointed.

*Trinity College, Dublin.*—Some correspondence has passed between your Committee and the Authorities of the College respecting the proposed erection of a new "Graduates' Memorial" building in the College, of Red Dumfries stone, the use of which material, it was felt, would go far to destroy the beauty of Sir William Chambers's design.

*The late Mr. Thomas Thornycroft's Statue of "Boadicea."*—Your Committee are pleased to report that they have been consulted by the Committee who have the erection of this important group of statuary in hand, as to the best site for the purpose. A sub-committee was appointed to view the work, and the matter is still under consideration.

#### REPORT OF THE PRACTICE STANDING COMMITTEE.

The Practice Standing Committee have held six meetings. They elected as Chairman, Mr. Edw. A. Gruning; as Vice-Chairman, Mr. Edwin T. Hall; and as Hon. Secretaries, Messrs. Henry Cowell Boyes and F. H. A. Hardeastle.

Amongst the matters considered by the Committee the chief have been: The payment of architects' fees by Fire Offices in connection with the settlement of fire claims and re-instatement after fires; Party-Wall and other Notices under the London Building Act 1894; the By-laws proposed by the London County Council under the Metropolis Local Management Act 1855; and the Institute Schedule of Professional Practice and Charges of Architects.

With respect to the first of these, negotiations are still in progress with the Fire Offices, and it is hoped that a satisfactory result will be arrived at. The Party-Wall and other Notices prepared by the Committee have been approved by the Council and issued. The suggestions made with reference to the proposed By-laws under the Metropolis Local Management Act were submitted to the London County Council. A proposed amended Paper on the subject of the Professional Charges of Architects has been prepared by a sub-committee, and is still under consideration.

#### REPORT OF THE SCIENCE STANDING COMMITTEE.

Since the date of the last Annual Report the Science Committee have held nine meetings, with an average attendance of thirteen members. The Committee elected in June last appointed Mr. P. Gordon Smith, Chairman; Professor Unwin, F.R.S., Vice-Chairman; and Messrs. William C. Street and H. D. Searles-Wood, Hon. Secretaries.

The proceedings of the Committee in regard to experimental research so far as brickwork-testing is concerned were laid before the Institute at the Ordinary Meeting of the 30th March, and need not be repeated here. The Committee desire to acknowledge their indebtedness to Sir William Arrol and to the London and India Docks Joint Committee for the valuable assistance rendered by them in carrying out these experiments. Further experiments have been prepared for, and will be put in hand in June next. When these are completed the Committee expect to be able to lay before the Institute detailed and reliable information, from which general conclusions may be arrived at with regard to the strength of brickwork of various descriptions at different stages.

The inquiry as to the acoustical properties of different buildings has not proceeded so rapidly as could have been wished, but efforts are being made to get experiments made throughout the Kingdom by members of the Institute.

The approaching Building Trades Exhibition and Handicraft Competitions of 1897 are now engaging the attention of the Committee, with a view to rendering the competitions better known, and to making them more complete and exhaustive than was the case in 1895, when the assistance of the Institute was only evoked at the last moment, and the preparatory arrangements were somewhat hurried.

Various useful inventions have been brought before the notice of the Committee, but not of such a character as to need any special report.

#### FINANCES.

The Accounts of Ordinary Funds for 1895, prepared by Messrs. Saffery, Sons & Co., Chartered Accountants, and audited by Mr. Frederick Todd [F.] and Mr. Wm. Woodward [A.], the Hon. Auditors appointed by the Annual General Meeting of 1895, here follow:—

Dr.	Exclusive of Entrance Fees, Final Examination Fees, and Subscriptions received in advance for 1896.	Cr.
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## INCOME.

TO ORDINARY EXPENDITURE—		BY ORDINARY INCOME—		INCOME.	
	£ s. d.	£ s. d.		£ s. d.	£ s. d.
Rent .....	760 0 0		Subscriptions—		
Gas and Electric Lighting .....	72 6 0		Fellows .....	2377 4 0	
Coals .....	20 14 0		Ditto, Arrears .....	74 11 0	
		853 0 0	Associates .....	1857 9 0	
Salaries and Extra Assistance .....		1347 14 10	Ditto, Arrears .....	124 19 0	
General Printing, Stationery, Postage, Petty			Hon. Associates .....	113 8 0	
Expenses, and Gratinities .....	386 8 0				4517 11 0
Expenses of General Meetings, Exhibitions, &c.	279 10 3		Dividends on Stocks and Shares .....		77 1 8
Housekeeping (including Office Attendant) ..	143 9 7		Sale of Publications (other than the		
Advertisements in Newspapers .....	21 0 0		JOURNAL and KALENDAR) .....		68 13 9
Examination Expenses .....	325 15 4		Use of Rooms—		
General Repairs .....	187 10 1		District Surveyors' Association .....	25 0 0	
Fire Insurance .....	21 11 6		Architectural Association .....	6 10 0	
Medals and other Prizes .....	173 4 0				31 10 0
Grant to Library .....	50 0 0		Examination Fees—		
Grant to Architectural Association .....	100 0 0		Statutory .....	17 17 0	
The JOURNAL—			Preliminary .....	249 18 0	
Reporting .....	66 3 0		Intermediate .....	128 2 0	
Printing and Binding .....	879 19 1				395 17 0
Illustrations .....	137 11 2		Balance (Deficit) .....		152 2 0
Addressing, Postage, and Carriage .....	243 19 11				
		1327 13 2			
Less amounts for Sales and Advertisements	411 5 7				
		916 7 7			
The KALENDAR —					
Printing .....	142 16 6				
Postage and Carriage .....	10 18 5				
		153 14 11			
Less amounts for Sales and Advertisements	46 1 6				
		107 13 5			
Contributions to Allied Societies .....		199 13 6			
Miscellaneous Expenses—					
Accountants .....	19 3 0				
Solicitors .....	132 15 0				
Sundries .....	7 19 4				
		159 17 4			
		£5272 15 5			£5272 15 5

Dr.	Balance Sheet of Ordinary Funds, 31st December 1895.	Cr.
<p> <i>Assets</i>            Cash at Bank, £1,000            Cash in hand, £500            Debtors, £200            Creditors, £1,500            Total, £3,200         </p>	<p> <i>Liabilities</i>            Capital, £1,000            Reserves, £1,000            Income, £1,200            Total, £3,200         </p>	<p>           £3,200         </p>

## LIABILITIES.

	£	s.	d.	£	s.	d.
To Sundry Creditors outstanding .....				615	19	6
To Examinations : Fees anticipatory of election .....				359	2	0
To Subscriptions for 1896 received in advance .....				91	7	0
To Accumulated Fund (being surplus of Assets over Liabilities)—						
Balance as per last Balance Sheet .....	12539	15	11			
Less Arrears included in above balance since received or cancelled .....	252	0	0			
Depreciation written off Furniture .....	65	10	8			
				317	10	8
				12222	5	3
Add Arrears for 1895, as per contra .....				164	17	0
Entrance Fees—						
2 Fellows (£5. 5s. each) .....				10	10	0
5 ditto from Associate class (£2.2s. each) .....				10	10	0
86 Associates (£3. 3s. each) .....				270	18	0
Fees of candidates forfeited .....				22	1	0
				12701	1	3
Less Balance at debit of Income and Expenditure Account .....				152	2	0
				12548	19	3
SAFFERY, SONS, & Co.,				£13615	7	9
Chartered Accountants.						

## ASSETS.

	£	s.	d.	£	s.	d.
By Cash at Bankers' .....	208	3	8			
Less Brick Testing Fund Balance .....	2	4	8			
<b>By Investments :—</b>				205	19	0
Architectural Union Co., 202 Shares ...	2828	0	0			
£1000 2½ per Cent. Consols .....	925	9	6			
<b>By Property :—</b>				3753	9	6
Furniture, Fittings, and Fixtures, as per last Balance Sheet .....	2497	8	1			
New Furniture and Fittings during 1895.....	124	8	2			
	2621	16	3			
Less Depreciation .....	65	10	8			
	2556	5	7			
Printed Books and Manuscripts .....	3700	0	0			
Oil Paintings .....	1800	0	0			
Lithographs, Prints, &c.....	400	0	0			
Water-colour, Sepia, &c.....	600	0	0			
Models, Plaster Busts, &c.....	140	0	0			
Marble Busts .....	150	0	0			
<b>By Debtors :—</b>				9346	5	7
JOURNAL Advertisements .....	83	6	8			
KALENDAR, ditto .....	30	0	0			
<b>By Subscriptions in Arrear—</b>				113	6	8
1894 .....	31	10	0			
1895, contra .....	164	17	0			
	196	7	0			
	£13615	7	9			

For the Anditors' observations on the above accounts, *vide* the Anditors' Report appended [see page 411].

Examined with the several vouchers and found to be correct. 1st April 1896. (Signed) { FREDK. TODD  
WM. WOODWARD.

*Note.*—Messrs. Saffery, Sons, & Co. call attention to the fact that, in the above Balance Sheet, the liabilities for payment outstanding 31st December 1895 amount to £615. 19s. 6*d.* (exclusive of Examination “Fees anticipatory of election, £359. 2s. 0*d.*,” and “Subscriptions for 1896 received in advance £91. 7s. 0*d.*”); and that the liquid and available assets wherewith to meet these amount to £3959. 8s. 6*d.*, as shown in the first two items on the Credit side.



(Signed) { FREDK. TODD.  
Wm. Woodward.

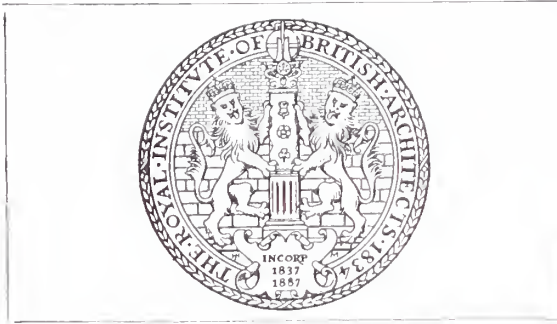
Dr.

## Balance Sheet of Trust Funds, 31st December 1895.

Cr.

		£	s.	d.			£	s.	d.
To ASHPITEL PRIZE FUND:—					By Government and other Securities for total value of				
Capital—20 Shares in the Architectural Union Com-					Trust Funds invested				
pany, Limited, at £14 per Share					9192 16 1				
Balance at credit of Revenue Account					213 9 6				
By Cash in hands of Bankers					By the following Accounts [deficit balances]:—				
To CHARITABLE FUND:—					£ s. d.				
Capital—£200. 10s. 2½ per Cent. Consols					Grissell Legacy				
Balance at credit of Revenue Account					12 17 8				
To DONALDSON TESTIMONIAL FUND:—					Owen Jones Fund				
Capital—£72 L. & N.W. Railway 4 per Cent. Prefer-					31 19 0				
ence Stock					Tite Legacy				
Balance at credit of Revenue Account					4 6 10				
To GODWIN BURSARY:—					Travelling Fund				
Capital—£1030 Caledonian Railway 4 per Cent. De-					6 14 5				
benture Stock					55 17 11				
Balance at credit of Revenue Account									
To GRISSELL LEGACY FUND:—									
Capital—£300 Great Indian Peninsula Railway 5 per									
Cent. Guaranteed Stock									
To LIBRARY FUND:—									
Balance at credit of Revenue Account									
To OWEN JONES STUDENTSHIP:—									
Capital—£1773. 6s. 8d. Midland Railway					£ s. d.				
3 per Cent. Debenture Stock					1773 0 0				
£850 Great Western Railway 5 per Cent.									
Consolidated Stock					1450 12 0				
					3223 12 0				
To PUGIN MEMORIAL FUND:—									
Capital—£1070 L. & N.W. Railway 4 per Cent. Pre-									
ference Stock					1342 12 6				
Balance at credit of Revenue Account					12 12 4				
To TITE LEGACY FUND:—									
Capital—£1150 2½ per Cent. Consols					1109 1 6				
To TRAVELLING FUND:—									
Capital—£830 Madras Railway 4 per Cent. Stock					1094 7 0				
To ALDWINCKLE STUDENTSHIPS FUND:—									
Balance at credit of Revenue Account					150 0 0				





9, CONDUIT STREET, LONDON, W., 7th May 1896.

## CHRONICLE.

THE COUNCIL: 1896-97 [p. 381].

### Nominations by Fellows and Associates.

The following Associate has been nominated as Associate-Member of Council for the ensuing year of office—namely, JAMES SIVEWRIGHT GIBSON. The nomination has been made, under the provisions of By-law 30, by the following Fellows and Associates:—W. F. Unsworth, Hampden W. Pratt, William A. Pite, John Hebb, G. H. Fellowes-Prynn, Leonard Stokes, *Fellows*; and H. V. Lanchester, John Begg, R. Shekleton Balfour, John E. Newberry, Sidney K. Greenslade, J. Humphreys Jones, Owen Fleming, Andrew N. Prentice, *Associates*.

THE STANDING COMMITTEES: 1896-97  
[p. 381].

### Nominations by Fellows and Associates.

The following nominations to Standing Committees have been made by Fellows and Associates under the provisions of By-law 49:—

#### Art Standing Committee.

WILLIAM ARTHUR WEBB [A.]: nominated by Charles Bell, C. W. Lovett, Frederick William Tarring, George H. Bibby, *Fellows*; and Alfred Millwood, Robert F. Hodges, Ernest A. E. Woodrow, *Associates*.

#### Literature Standing Committee.

GEORGE HENRY BIBBY [F.]: nominated by Charles Bell, Frederick William Tarring, George Highton, Arthur Ardron, *Fellows*; and W. Arthur Webb, George Harvey, Alfred Millwood, Robert F. Hodges, *Associates*.

#### Practice Standing Committee.

WILLIAM WARLOW GWYTHYR [F.]: nominated by Charles J. Shoppee, John Clarkson, Thomas Batterbury, Henry Hall, C. Herbert Shoppee, Thomas E. Colcutt, *Fellows*; and R. Stark Wilkinson, *Associate*.

GEORGE HUBBARD [F.]: nominated by Lewis H. Isaacs, Thomas Batterbury, John Clarkson,

Thomas E. Colcutt, George Inskipp, Henry Hall, *Fellows*; and R. Stark Wilkinson, *Associate*.

### Mr. Penrose's Tour.

A letter, dated 19th ult., from the President, who was then at Patras, in Greece, has been received by the Secretary of the Institute, as follows:—

I had not at any time during my stay at Athens forgotten your request that I should send you some account of anything I thought likely to interest the readers of the JOURNAL; but I found the work I had undertaken demanded all my attention, and left me no leisure that I could at all satisfactorily employ on the object referred to. It was necessary for me to examine the weak places of the Parthenon, and to discuss the remedies with the local committee, with whom I am glad to say I worked very harmoniously; and I hope that finally the measures which will be taken will secure the Parthenon against danger from any repetition of an earthquake of similar or even greater violence than that which occurred in 1894. All this occupied much time and much climbing. There was also a journey to Pentelicus to examine the stones which are being prepared for the repairs. This business, however, is too long a matter for a letter, and all I will add to what I have said is to give you my opinion that there will be, if the work is done, as I hope and believe it will be done, no disfigurement to the temple, and scarcely any sign of new material.

The only other object of interest in or near Athens to which I was able to give any attention was the important excavation which has been conducted by the German Archæological School under Dr. Dörpfeld for the discovery of the great water supply of Athens, the Enneacrunus. Some archæologists of authority do not yet admit that the actual Enneacrunus has been found; but at any rate a very complete system of water supply and distribution has been discovered, and not without archæological arguments to set against those of the doubters. The main conduit which brought the water to these works has been traced for a considerable distance, almost, or quite, as far as the eastern boundary of the ancient city, and it is not an unreasonable expectation that it will be discovered nearer to the mountains which supplied the sources of the water.

The thing which struck me most was the admirable engineering of the whole work. The water was brought in shouldered pipes of very sound pottery. These, in the parts I could get at, are approximately 2 feet long and 8 inches in diameter, the joints being made good with lead in the most workmanlike manner. There are frequent inspection pits, and also inspection holes with carefully fitting covers in the pipes themselves; in fact, this hydraulic work of the age of

Pisistratus, at least 530 B.C., is as advanced as it could be done now. The sewage arrangements were also very complete under the roads, with numerous inspection cylinders, these being formed of large earthenware rings. The account of these works will certainly be very interesting when the Germans have time to publish it fully. A commencement has already been made in the *Mittheilungen* of last year—I think the second part.

Since leaving Athens I have been round by Poros, *i.e.* the newly excavated temple of Neptune, at Calaureia, Nauplia, the Heræum of Argos, where a very large precinct with temples, loggias, &c., has been excavated by the Americans under Dr. Waldstein, and by Corinth, where the Americans under Dr. Richardson have just commenced what will probably turn out to be an important work. You have doubtless heard that the British School has commenced work in the island of Milos. Mr. Cecil Smith is much pleased with the prospects offered by the site. Then by Delphi, which, to understand it, deserves much more time and better weather than I had; when fully developed it cannot but be a great success. I am now proposing to continue my investigation of the orientation of the temples in Magna Græcia and part of Sicily as much as the time allows, so as to be back for the Manchester Meeting of the 20th May.

#### The Meeting and Dinner at Manchester.

The arrangements for the Meeting and Dinner to take place at Manchester on Wednesday the 20th inst. are now almost concluded. The President, Mr. Penrose, will hold a reception during the afternoon in the rooms of the Manchester Society, when Mr. Edward Salomons [*F.*] will read a Paper on "The Relations of the Institute to the 'Allied Societies.'" At the Dinner, which is to be held at the Queen's Hotel, Manchester, the Institute will be honoured with the presence of a number of representative guests from Manchester and the North of England.

#### Books received from Publishers.

*London Churches of the Seventeenth and Eighteenth Centuries* by Inigo Jones, Sir Christopher Wren, Nicholas Hawksmoor, and James Gibbs. Containing 64 plates and numerous smaller illustrations. With Historical and Descriptive Accounts by George H. Birch, F.S.A. [London: B. T. Batsford.]

*A Text-book of the History of Architecture.* By A. D. F. Hamlin, A.M., Adjunct-Professor of Architecture in the School of Mines, Columbia College. [New York, London, and Bombay: Longmans, Green & Co.]

*Cottages and Country Buildings.* Designed by Thomas W. Cutler. [London: H. Cox.]

*Stencils of Old Japan*, from Originals in the Collection of Ernest Hart, D.C.L. (Member of the Japan Society.) With an Introductory Note. [London: J. S. Virtue & Co.]

*Animal Symbolism in Ecclesiastical Architecture.* By E. P. Evans. With a Bibliography and 78 illustrations. [London: William Heinemann.]

*Metropolitan Sanitation*, with Appendix containing the Public Health Act 1891, and By-laws and Regulations in

force throughout the Metropolis. By W. Herbert Daw, F.S.I. [London: F. P. Wilson.]

*New Zealand Timbers and Forest Products.* Compiled by Sir Westby B. Perceval, K.C.M.G., Agent-General for New Zealand. [London: New Zealand Government Offices.]

#### Additions to the Library.

Mrs. Christian has presented to the Library a memoir, compiled by various hands, of her husband, the late Mr. Ewan Christian. The work, which is printed for private circulation, deals sympathetically with the life, work, and character of the deceased architect, the chapter under the second heading being an enlargement of the notice by Mr. Birch which appeared in the *JOURNAL*. The admirable portrait of Mr. Christian, which forms the frontispiece, is a copy of a life-sized crayon sketch drawn in 1876 by the late George Richmond, R.A.

Copies of *A History of Architecture on the Comparative Method*, by Professor Banister Fletcher [*F.*] and Mr. Banister F. Fletcher [*A.*], have been received from both the publisher and the authors [London: B. T. Batsford], and will be placed respectively in the Loan and Reference Libraries.

Mr. Norman C. H. Nisbett [*A.*] has presented a couple of pamphlets, of which he is the author, reprinted from the *Proceedings* of the Hampshire Field Club, entitled respectively "Notes on the Roof of 'The Pilgrim's Hall, Winchester,'" and "A Description of the Chapel in Westbury Park, West 'Meon,'" each being illustrated by the author.

*Theatre Panics and their Cure*, by Archibald Young, with plans for a safe theatre, prepared by Thomas T. Paterson, has been received from Mr. Young [London: B. T. Batsford].

*Hygiene des Städtebaus*, by J. Stübgen [*Hon. Corr. M.*], with 31 illustrations in the text; and *Essai de Classification et d'Appréciation des Formes*, by Professor L. Cloquet, have been received from the respective authors.

Mr. R. Langton Cole [*A.*] has presented a *Handbook to the Museum of Practical Geology*, Jernyn Street, S.W., and recommends it as a most useful guide to architectural students, laying particular stress upon the pages devoted to Building and Ornamental Stones as being an excellent introduction to the scientific aspects of the subject.

M. Eugène Müntz [*Hon. Corr. M.*] has presented on behalf of the École Nationale des Beaux-Arts the following compilations by Ernest Vinet: *Bibliographie Méthodique et Raisonnée des Beaux-Arts* (Parts 1 & 2); and *Catalogue Méthodique de la Bibliothèque de L'Ecole Nationale des Beaux-Arts*.

Professor Unwin [*H.A.*] has presented the *Report* of the Committee appointed to inquire into the causes of the explosion and the precautions required to ensure the safety of cylinders of compressed gas.

The Editor of *The Builder's Journal* has for-



warded Volumes I. and II. of his periodical for the Loan Collection.

*The Catalogue of the Avery Architectural Library*, a work comprising over 1,100 pages, has been presented by Mr. and Mrs. Avery and the Trustees of Columbia College in New York. A description of the Avery Library, with an account of its foundation and objects, will be found at page 188 of the present volume of the *JOURNAL*, in an article contributed by Mr. Barr Ferree [*Hon. Corr. M.*].

*The Engineering Magazine* for April (New York & London), just received, contains the second part of Mr. R. W. Gibson's excellent Paper on "The Architecture of Modern Bank Buildings," dealing with the site, the exterior, and provisions for safety, with illustrations from various banks in the United States.

*The Dream of Poliphilus*, being fac-similes of one hundred and sixty-eight woodcuts in *Hyppnerotomachia Poliphili* (Venice, 1499), with an introductory notice by Dr. J. W. Appell, has been purchased.

*The Annual Progress Report* of the Archaeological Survey Circle, North-Western Provinces and Oudh, for the year ending 30th June 1895 and the *Calendar* for 1895-96 of the Poona College of Science have been received.

A medal struck in commemoration of the Opening of the Tower Bridge has been received from the Corporation of London.

## REVIEWS. XL.

(109)

### MR. RUSKIN AS POLITICAL ECONOMIST.

*Fors Clavigera: Letters to the Workmen and Labourers of Great Britain.* By John Ruskin, D.C.L., LL.D. New edition. Vol. I. containing Letters I.-XXIV. 80. Lond. 1896. Price 6s. [George Allen, Sunnyside, Orpington; and 156 Charing Cross Road, London.]

If any writer in the future should pen a fellow to Artemus Ward's ingenious essay on what he calls "Forts," he might well enlarge on the persistency and wilfulness with which humanity misreads itself. Here, for instance, we have Professor Ruskin calling the world to witness that his "forte" is really not description but Political "Economy." It is a question whether *Fors Clavigera*, or even *Munera Pulveris*, suggestive as it is, substantiates the latter contention. It is enough to turn over a few pages to be able to give the lie direct to the former. Here is a description of one of those Florentine prison-palaces one knows so well:—

The corner-stones of it are ten feet long by three broad and two thick—fifty courses of such, and the cornice; flawless stones laid as level as a sea-horizon, so that the walls become one solid mass of unalterable rock—four grey cliffs set square in mid Florence, some hundred and twenty feet from cornice to ground.

It is almost forty years ago now, however, since the Professor, in his lectures at Manchester on the Political Economy of Art, showed that inclination to desert artistic for social problems which has long been regretted by many of his sincerest admirers. Not that these social writings do not do infinite credit to his heart, not that the gospel they declare may not be put into practice by the few to the increase of their contentment, happiness, and well-being; but it is only the few that such theories as this can deal with, and that is their fatal flaw. To close the eyes resolutely to the fact that the evolution of society follows laws of its own, just as truly as that of animal life, can have no good result; and the man who points to a past state of society which had no condition in common with that of the present day as an example to be followed is, and the epithet is thrown at his head for the thousandth time, unpractical.

Circumstances, of which we are the slaves as well as the makers, do not allow us to pick the exact form of society which appeals to us, but only to modify and shape in infinitely small degrees what is to our hands.

When our thirty or forty millions of people shall be pruning fruit trees and driving furrows with the converted instruments of war, when no man shall try to undersell his neighbour, when even such usury as is represented by 2½ per cent. shall be unknown, when machinery shall have been relegated to the sphere of colossal enterprise which belongs to it, then the millennium will indeed be with us; meantime the dreams of Rousseau, of Rabelais, of Sir Thomas More are not more poetically in their interest.

A little society which turns its back on all that it considers artificial in modern life—and what do the exceptions amount to?—is really cherishing artificiality at the expense of nature, because the life of the world, in its larger aspects, is the natural one under the conditions which govern it, and the fact that it is the life of the world shows its naturalness. A generous soul may love to create a little Utopia, a nutshell of perfection, to see again that type of happiness and innocence which belongs to the childhood of a people, on however diminutive a scale; but it is more useful, perhaps more unselfish, to accept the broad facts as they are, and to try to shape them in the mass. This is what altruistic legislation has long been engaged upon, and it is just this which Professor Ruskin regards with disfavour rather than indifference.

With his reprobation of a low commercial morality, and of the vices which are the spawn of dense populations; with his worship of *αἰδώς*—the spirit of veneration—a virtue which nineteenth-century England has little more power of realising than of translating with his insistence that the citizen, who claims from the State the solicitude of a parent, shall yield her the obedience

of a son, everyone is in agreement; with his great compassion for humanity, so emotionally conceived, so practically expressed, we all have our varying degrees of sympathy. Happy is the man for whom the quixotic and the reasonable are not always in disaccord! We will not accuse Professor Ruskin of tilting at windmills; he does nothing of the sort. Let us say, however, that he attacks Leviathan with a needle-point, and we shall have named the quality which has endeared him and made him a power to generations of disciples, for his leadership rests on a moral, not an intellectual, foundation.

He does not wait upon others, as men are so prone to do; he does not linger till a movement is at the flood before committing himself to it. Whatever it is right, according to his lights, that mankind should do, it is right that he individually should do; whether his action shall be made fruitful by the help and sympathy of others who can say? For him, at least, in his own words, "Laisser-aller is the depth of injustice," and no degree of lukewarmness in others can justify it.

ARTHUR EDMUND STREET.

(110)

### COMPENSATION.

*The Law of Compensation: being a Collection of the Public General Acts relating to Compulsory Purchase of and Interference with Land. With Notes of all the Cases thereon, and an Appendix of Reports, Forms, and of the Statutory Provisions specially applicable to London. By J. H. Balfour Browne, of the Middle Temple, Esq., one of her Majesty's Counsel, and Charles E. Allan, M.A., LL.B., of the Inner Temple, Esq., Barrister-at-Law. Demy 8o. Lond. 1896. Price 27s. 6d. [Messrs. Shaw & Sons, Fetter Lane, E.C.]*

The activity of the publisher, as shown in the still increasing issue of professional books of all qualities, furnishes additional reasons for that discrimination which has always been necessary, and was never more necessary than now. The motives of a professional man for writing a book on a professional subject are various. Sometimes it is a desire to initiate improvements of principle or practice, or to expose, by contrast, the quality of some previous book on the same subject. In others it is an attempt at "bold advertisement"; in the worst of such cases it takes the form of a monograph on the author's ability, interspersed with incidental allusions to the ostensible subject of the book. This kind cometh not except by long sojourn in the academic groves of Blarney. Unfortunately, the successful man of business, the man who could write to some purpose, is usually so hardly worked that in his rare intervals of leisure he hates the mere sight of a book, except a novel or, perhaps, a Bible. Thus it often happens that the books on professional subjects are the work of men, possibly clever, but of limited experience.

The work of Mr. Balfour Browne (whose solid

reputation in the Courts is well known) and his colleague is not open to these objections. Whether the book was necessary is another question. The works of Cripps, Lloyd, Woolf and Middleton, and others would appear to furnish all the information required. These, to be sure, are behindhand with the cases, which in this book are included up to July 1895.

The diligent student of the handbooks on such subjects written from the surveyor's point of view, who is apt to think that he knows all about the subjects they treat, will at sight of this book of a thousand pages experience a salutary revulsion of belief, and turn to its study in pensive mood. The Lands Clauses Consolidation Act of 1845 has been for over fifty years the great foundation of compensation practice. The sudden and enormous development of the railway system after 1830, and the opposition of the landowners and others, by Parliamentary and other means, involved the projectors of the lines of railway in enormous expenses. It is said that the Parliamentary costs of the Manchester and Birmingham Railway were £5,000 per mile, of the Blackwall Railway £14,000 per mile. The necessity for legislation was imperative, and the consolidation in a general Act of the provisions which had been before inserted in local and personal Acts relating to the acquisition of land and the compensation to owners was an important and beneficial advance in the law of compensation. The authors say of this Act of 1845:—

It may therefore be regarded as the foundation of the modern Law of Compensation. It has accordingly been placed first of all the statutes included in this work, and the various sections have been fully annotated. The authors have endeavoured to indicate clearly the principles which underlie the cases in which compensation has been claimed, and the procedure which has been stereotyped by statutes or by a long course of decided cases.

The plan of the book is not original, but it is a very good one. The Act of 1845 is printed section by section, and each of them is followed by practical advice and comment, notes of cases, and cross-references. The other Acts which affect the subject are treated in a similar manner.

The comments and notes on the Arbitration Act 1889 and the Housing of the Working Classes Act 1890 will probably most interest the average architect, whose practice in compensation cases has been gradually but largely transferred to land agents and auctioneers.

In an appendix we have the subjects of betterment (the Betterment Clauses of the Manchester Corporation Bill as passed are here quoted, and, as a piece of brand-new legislation, are especially interesting), reinstatement, special adaptability, statutes relating to compensation passed prior to the Lands Clauses Act 1845, compensation in the County of London, a large collection of precedents (forms) under the Lands Clauses Consolidation



Act 1845, the Highway Act 1835, and the Metropolitan Paving Act 1817. The interesting and important case of *Ossalinski v. Manchester*, not before reported, is also given. The index of cases is complete and valuable.

"Worsement" is not mentioned, but every lover of English pure and simple will await with impatience its establishment in the language with its boon companion "Betterment."

Legal ingenuity and popular cupidity together have refined upon the primary principles of valuation and compensation, with some peculiar results. Betterment, worsment, special adaptability, and the like would probably astonish that ancient pedant who, wishing to sell his house, carried a brick in his pocket as a specimen. Little argument is necessary to show that the lawyer's work in a compensation case, compared with that of the surveyor, is much the more important. That the collaboration of the two professions in a work of this nature has an exceptional value is shown by the latest edition of Boyle and Humphreys-Davies' *Principles of Rating*. The books on such subjects when written by the lawyer are weak as to the surveyor's work. Those written by the surveyor have too little law.

This book is well arranged, clear, practical, and complete. It is a workmanlike addition to the literature of compensation.

JOHN LEANING, F.S.I.

(111)

### WREN'S CHURCHES.

*London City Churches.* By A. E. Daniell. With numerous illustrations by Leonard Martin. So. Westminster, 1895. Price 6s. [Messrs. Archibald Constable & Co.]

It is a hopeful sign of the times that Mr. Daniell and his publishers believe that outside the select circle of antiquaries, historians, and architects, for whose advantage many great books on this subject already exist, there is a wider circle of the public who are also interested in the London city churches. Not only is it desirable to afford opportunities for educating the taste of the public in matters relating to architecture, but there is in our day a special and urgent reason for directing attention to the city churches. In his interesting introduction Mr. Daniell points out that of the fifty churches built by Wren in London, fifteen have already been destroyed to make way for public improvements, or to secure the valuable sites on which they stood for commercial purposes, and it is almost certain that others will in like manner shortly disappear. It is quite true that in the changed conditions of city life even a moiety of the churches left would more than suffice for the resident population of London, and that the endowments and the value of the sites no longer required are properly utilised in building other churches in the outlying districts where they are really needed. It is also true that all Wren's

churches were not of equal importance as architectural adornments of the city. Some were erected under such adverse conditions as to shape and size of site, paucity of funds, or unpromising surroundings that not even the genius of our greatest architect could make much of them.

But it is very evident that the present destructive spirit is not content with the more obscure edifices, but is prepared to lay hands on churches which have commanded the admiration, not only of architects, but of citizens and strangers, for many generations. Protests in newspapers are of little or no account unless these are supported by the opinion of an educated and influential public; and the public are not sympathetic because they do not know much about the subject. Mr. Daniell has therefore done good service in producing so attractive and readable a book on the London city churches, and one sincerely trusts his dainty volume will have the widest possible circulation. Avoiding prolixity and technicalities, he gives really everything worth knowing about this interesting group of churches—their history, their architectural value, and the interest attached to them from the great preachers who have ministered there, or the memorials of the dead who are interred within their walls.

We fear that few London architects have studied the churches of London as thoroughly as they have done those of Paris or Venice, or indeed any other foreign cities, great or small, they may have visited. Yet Wren's churches are a unique and invaluable group—a school of design in architecture, whether in respect of planning, construction, or composition, the sole work of one of the greatest architects of modern times. The terrible fire which in five days destroyed 396 acres of houses, including 89 churches besides chapels, removed for ever the curious old city of Shakespeare's time, which Stow so fully described, and all that was left of the crowded, insanitary, plague-infested city was a heap of smouldering ashes. Unfortunately, the fire could not obliterate the foundations, and the city was restored on the old lines, giving narrow winding lanes and streets, and crooked rhomboidal sites for the new churches.

If we consult Clayton's excellent book on Wren's Churches, we may see with what skill Wren treated the most awkwardly shaped sites so as to produce the best possible results. At St. Stephen's, Walbrook, a simple rectangular plan, 82 feet 6 inches by 59 feet 6 inches, afforded space enough for the exercise of his genius in the production of an interior of such singular beauty and harmonious variety that, "next to St. Paul's Cathedral, it is "considered Wren's masterpiece." In 1888 the pews were removed, and in my opinion the interior has been injured by their removal. The passages explained the plan, and gave meaning to the arrangement of the columns. These now look stilted, thin, and unsatisfactory. Wren placed

pedestals under his columns so that they should show clear above the general line of the pews, and the removal of the pews produces an effect which the architect did not contemplate in his design. One really feels heart-sick even to read in Mr. Daniell's pages of the constant "alterations," "renovations," and "restorations" needlessly carried on in the city churches, by which their original interest and beauty are almost destroyed to suit ecclesiastical and other notions foreign to their original purpose.

Wren was a perfect master of construction. The materials he used were well-selected English oak and Portland stone, and the workmanship and design have been so excellent that from foundation to pinnacle these churches are as sound to-day as when first built. Clayton gives sections of the difficult and often intricate construction of the steeples, towers, roofs, &c.; and these show the work of a master-builder thoroughly acquainted with the principles of timber and stone construction. Probably no other architect ever brought to his aid such a consummate knowledge of the theory and practice of building as did Sir Christopher Wren, who in his twenty-fifth year was a professor of astronomy in Gresham College (they lectured in Latin in those days), and was one of the greatest mathematicians of his day, the friend of Sir Isaac Newton, and a founder of the Royal Society.

Although it was the Great Fire which afforded occasion for the display of the distinguished talents of Sir Christopher Wren, it should not be forgotten that five years before (in his twenty-ninth year), he had been brought to London to assist in the great works contemplated by the King, and had already built the Ashmolean Museum and other large buildings, and was employed on the restoration of St. Paul's before the fire of 1666, or his visit to France in 1665.

While he was hampered in his plans by unpromising sites, and in his towers by the close environment of houses, he rejoiced in the free exercise of his powers of design in the tall spires and steeples which were his chief contribution to the architectural adornment of the new city. A handy little book by Mr. Andrew Taylor, *Towers and Steeples designed by Sir Christopher Wren*, brings before us the wonderful variety and beauty of these architectural compositions, in ten stone steeples, nineteen lead spires and lanterns, and fourteen towers, besides ten "steeples, spires and towers pulled down" (before 1881).<sup>\*</sup> All of these designs will repay careful analysis, for Wren did nothing without study and a purpose. Some would say that purposefulness was the chief characteristic of Wren's work. In the *Parentalia* we may read how much thought and

careful study he gave to his work. His most important steeples were placed at some distance around the central feature, the dome of the Cathedral, and elsewhere just in the positions where they would be most effective in any view of the city, while those of less height were also designed so as to assist the general result.

Mr. William Morris, in protesting against a proposal to remove one of these churches, says: "It must be remembered that when you lose a church from the city, you lose it not only as a church, but as part of a whole of a great design; for it was no doubt in the mind of Wren that all the churches should form a support to the great central mass of St. Paul's." So we find the great church of St. Mary-le-Bow at about the same distance east of St. Paul's as the great church of St. Bride's is to the west. On the north we have the fine steeple of Christ Church, and not far off the church of St. Vedast. The beautiful cupola of St. Magnus marks the northern end of London Bridge, as St. Saviour's does the southern end. Possibly the best position from which to see London is Bankside, near where Shakespeare's theatre, the "Globe," stood. The great poet must often have turned his eyes to the spires and towers and the Cathedral of the old city; and not improbably that view was in his mind when he wrote the apocalyptic vision (amongst the latest lines from his pen):—

The cloud-capt towers, the gorgeous palaces,  
The solemn temples, the great globe itself;  
Yea, all which it inherit, shall dissolve,  
And, like this insubstantial pageant faded,  
Leave not a rack behind.

Like the great apocalyptic vision of St. John, Shakespeare's had within it a prophecy of "the things that must shortly come to pass." Of the old churches that escaped the fire, Mr. Daniell tells us St. Bartholomew-the-Great (originally a conventual church) "is the oldest parochial church in London." But Rahere also built the church of St. Bartholomew-the-Less, the older parish church, whose records contain the entry of the birth of Inigo Jones.

Wren was not only a great architect, he is the best and truest representative English architect; his work has that quality and style which Englishmen love to think of as characteristic of their race. It is substantial, reasonable, and noble, and not quite like the style of any other country. Moreover, Wren was personally not only an architect of sound abilities and genius, but was patient, persevering, energetic, honourable, so that no country can boast of a leader and head in architecture more worthy that position than the architect of the London city churches. The impulse given by the genius of Wren was the renaissance of architecture in this country. His noble work became the standard for the emulation of all who followed after him, and his personal character raised the

<sup>\*</sup> See also Cockerill's drawing of the Towers and Spires, which has been beautifully engraved.—T. A.



position of architects to a level probably never attained in England at any former time.

The student of architecture could not do better than provide himself with Mr. Daniell's book, and proceed with it to a personal inspection of all the churches he describes. A plan of the city would have been a useful addition, but the clever sketches by Mr. Leonard Martin will help to their identification, indicate the best points of view, and assist one to bear in mind the individual characteristics of each, while the larger illustrations from photographs—wonderfully clear and effective—show in a way not otherwise possible the general appearance of the more important interiors.

THOMAS ARNOLD.

(112)

### GREEK SCULPTURE.

*Masterpieces of Greek Sculpture: a Series of Essays on the History of Art. By Adolf Furtwängler. Edited by Eugénie Sellers. With 19 full-page plates and 200 text illustrations. 40. Lond. 1895. Price £3. 3s. [Wm. Heinemann, 21, Bedford Street, W.C.]*

I must confess that it was with a feeling of dread that I approached Professor Furtwängler's book, *Masterpieces of Greek Sculpture*. It has a look so truly imposing. But my devotion to this JOURNAL led me to surmount that feeling, and in truth I was richly rewarded. Once I had started, I read the book from the first line to the last with raptured interest. It is an invaluable contribution to the history of art. In fact, we owe Germans in this department a deep debt of gratitude.

Although in the first part of his work, which is devoted to Pheidias, Professor Furtwängler declares that it is not his intention to write an exhaustive treatise on the works of the Pheidian School, he teaches us more about it than volumes would; and I fancy that it will be henceforth impossible to speak of that wondrous period, when art as nearly as possible attained perfection, without having carefully studied a book which in its disquisition on the Lemnian Athena, its surmises on the Torso Medici in the Paris School of Fine Arts, its views, so finely based upon facts, on the master of Pheidias, its description of the Parthenon, its lucid attribution of the Colossi of Monte Cavallo to Pheidias and the elder Praxiteles, showing how Pheidian art went from the calm repose of the Lemnia to the impetuous motion of the Dioscuri, and, finally, its rapid and complete review of Pheidian influences in Sicily and Magna-Græcia, is profoundly original.

Nor is this all. Without breaking the thread of his story, Professor Furtwängler goes from Pheidias to those artists who, side by side with his school, followed an independent line. First, Kresilas, the young and gifted Cretan, who, having made his way to Athens, much as in modern times so many artists have made their way to London or to Paris, soon established his reputation, and became famous enough to be

entrusted with the bust of Perikles. We have a copy of that bust here, in the British Museum, and nothing can surpass the dignity and refinement of that thoughtful face, fully Athenian in the voluptuous curve of the lips. The expression is serious, but without any tinge of moroseness—rather that which one would expect and often finds in statesmen. Professor Furtwängler discusses with full details the celebrated works by Kresilas mentioned in Pliny, and the much debated question of the Ephesian Amazon statues is solved by him in a manner which cannot, to my idea, leave any doubt in unprejudiced minds. This view, if accepted, shows Kresilas, the sculptor of the "Capitol type," as a more realistic artist, whose Amazon is nearer our human nature. With great ingenuity the Professor suggests how the four statues stood in the temple at Ephesos, and his instinct leads him surely. For Kresilas, Professor Furtwängler claims the honour of having conceived the Athena Soteira, of which a remarkable copy, found in a Roman villa at Velletri, adorns the museum of the Louvre. It is also a well-grounded conjecture that ascribes to Kresilas the Diomède of Munich; and Professor Furtwängler is so convincing, he calls to his aid such an abundance of finely sifted arguments, that one feels bound to side with him when he associates the beautiful Medusa Rondanini with the name of Kresilas.

I cannot follow the Professor in his chapter on the relation of Kresilas to Myrion, which was very much that of a pupil to his master. That part deserves the closest study, as well as the all-important chapter on Polykleitos. I cannot do more in this Review than express with what deep interest I have read it, and what vistas it has opened to me upon a period of art which is here described and explained with the most wonderful wealth of argument and witnesses. Go to the British Museum, for instance, and study the Westmacott Athlete in the light of Professor Furtwängler's theories on the Kynistos; or go to Petworth House to look at the oil-pourer; and you will have an idea of the debt of gratitude we owe him. And is it not a very fine deduction by which, ascribing to the Polykleitan school the bronze statuette of a youth wearing a mural crown, in the Bibliothèque Nationale of Paris, the Professor confirms the name given to it of the god Aristaïos, son of Apollo? The Professor truly concludes that, unlike Pheidias, Polykleitos did not excel in invention or wealth of meaning. He only created youthful, beardless figures; but no one did it with more delicacy or with a finer harmony of reserve and repose.

The next chapter is devoted to a study of the works of those artists who were influenced by Polykleitos, such as Skopas, who felt more strongly, perhaps, the Attico-Ionian influence; Praxiteles II., whose Hermes, in opposition to

Brunn, Professor Furtwängler holds to belong to the artist's later period rather than to his youth, and to whom—all-important discovery—he ascribes as a real original the superb life-size head of his favourite goddess, Aphrodite, which belongs to Lord Leconfield. Finally, the Professor speaks of the Isthmian Euphranon, who excelled equally as painter and sculptor.

I read the chapter on the Venus of Milo with all the more interest that the proposed restoration by M. Ravaisson was some time ago in Paris the cause of endless jokes. The restoration suggested by the Professor seems most practical, although I should be sorry if it were ever—that or any other—carried out. I trust the Venus of Milo will remain such as it is now, and if Professor Furtwängler is right in believing that too much praise has been bestowed upon a work which is not a unique and unrivalled treasure, yet it is a truly beautiful example of a still great art, inspired, I admit, by a creation of Skopas, executed as late as the first century B.C., but of great excellence, and which has secured the admiration of succeeding generations, guided by a sort of unerring instinct.

The book ends practically with a chapter on the Apollo of Belvedere, but the appendix on the temples of Athena on the Akropolis, which forms, in fact, a portion of the original book, is not the least interesting part of the English edition. Much has been written on the Akropolis, and, indeed, that narrow rock offers a large field for observation; the dullest mind cannot but be moved in presence of the creation of that powerful genius which inspired the Greeks of old. Full of years and discarding a well-earned rest, Mr. Penrose has gone again to that Parthenon which he described so well, and which has truly been called the most perfectly wrought and nobly placed building in the world. One understands it the better after reading Professor Furtwängler's masterly essay.

The book has been most ably edited by Eugénie Sellers, and our thanks are due to Mr. Heinemann for the beautiful vestment in which this useful work is clothed.

A. BARTHÉLEMY.

## NOTES, QUERIES, AND REPLIES.

### The Architect's Use of Colour [p. 365].

From J. D. CRACE [*H.A.*].—

It was my misfortune to be engaged at a distance from London when the Papers on "The Architect's Use of Colour" were read. I therefore missed not only the illustrations, but that personal persuasiveness which the reader of his own Paper can usually exercise over his audience if he is himself in earnest, as both authors evidently were. Yet, reading them to myself afterwards, in cold-blooded print, they seem to me peculiarly open to criticism from two points of view. In the

first place, like almost all the Papers or discussions about "Colour," within the walls of the Institute, there is that peculiar quality of "amateurishness" which seems to be as inseparable from the subject as "sharp practice" from horse-dealing. There is a sort of childlike surprise at every fact, though it has been discoursed of and thrashed out by every text-book, or by every serious writer on the subject—so that it is impossible to help suspecting that whereas in other branches of architectural art men find it desirable to study the subject by acquainting themselves with the knowledge stored up already, in this branch men plunge in, relying only on their intuitive perceptions. This is a pity, because, always beginning at the bottom of the ladder, we make so little real progress.

But the second point of view seems to me a more serious one for the consideration of architects. It is this, that both Papers in treating of colour ignore its first duty as "handmaid of architecture." As I conceive it, this first duty to architecture is to *assist the expression of architectural form*. Not a word of this. One author commends colour as "an excellent substitute for architecture"; the other treats architecture as a rather annoying condition of the use of decorative colour; necessitating all sorts of tiresome but ingenious tricks or experiments—and I venture to think that many of those experiments are absolutely illusory, so far as the effect on the building is concerned.

The only speaker who seemed to have a grasp of the true "architectural" bearing of the subject was Mr. Statham, who seized the true points with a well-trained instinct; and although he handled them very gently, it is evident that he could have said much more. With a critic like Mr. Brett, who argues that London cannot be made beautiful, because "founded on London clay, the filthiest colour he knows" (but which, he omitted to say, can nowhere be seen on the surface), of what use to discuss any point?

But, to return to the Papers, are we so sure that the substitution of glazed, coloured brickwork, or tilework, for architectural feature would prove so delightful a change in London streets? Does this not a little too confidently anticipate that neighbours would agree to harmonise their frontages; or, indeed, that their architects would all have made a real study of colour? Imagine, for a moment, the effect of even one gross incongruity among a dozen houses. As Mr. Ricardo himself points out, you may forget moulded form, but "colour" you *must* see and *can't* forget. If we think of the advertising possibilities—of the necessity for each pushing tradesman to make his front just a little more gaudy than the next—I am inclined to think that we might come to regard a barrel-organ as a nerve-sedative by comparison.

Again, is it not a little hard on our own generation, which has waited some thirty years or so already for Keble College to mature, to point out



that in some 400 years Keble College may attain to the full beauty which Mr. Butterfield foresaw when he "played confidently into the hands of "Time"? I may be prejudiced, but I should not call this "the architect's use of colour," but "Time's use of colour"—a very different thing. In a good deal less than 400 years "Time" can so use his palette on a bit of garden wall built by William Stubbs, bricklayer, as to put out of countenance all these confident playings into Time's hands by architects who neglect their own generation and throw the responsibility on Time. Jesus College, with its fine old brickwork, produces its charm for some other reasons than are due to Time alone—such as its simple expression of collegiate purpose, its unpretentious acceptance of division into small sets of rooms, treated with picturesque, yet simple outline and detail. Our "descendants of the year 2000 and more" may have got tired of waiting for Time's kindly hand, and may have built something in place of the jewel which takes so long to polish.

I have said that some, at least, of the experiments which Mr. Whall described as "tricks of "the trade," and the "very essence of his practice," are illusory so far as colour is concerned. To take one. He painted a specimen of a decoration of birds; and, that he might be sure that he was right, had it held up on a stick at the top of his own staircase—the height of which was the same as the roof for which the decoration was destined. But all roof decoration is mainly dependent on reflected light; and all reflected light is tinted by the objects from which it is reflected; and, besides this, all colouring is largely affected by contiguous or proximate masses of colour, such as those of timber structure, walls, &c. It is hardly to be assumed that these conditions were the same in the staircase as in the distant church. How, then, did Mr. Whall decide that his colour was exactly right, when the whole scale might turn upon the source of the reflected light in the church itself?

Mr. Whall again commends what he describes as "*dark schemes of colour for dark places.*" I cannot help thinking that he meant to say "deep" or "rich" tones of colour, not dark; and that this was his meaning is shown by his glazing his colour with a pure strong crimson. The principle in this form is, within limits, practically true and theoretically simple. For just as a very small quantity of black will suffice to make dingy or neutral a pale tint in water colour, so a pale tint on a wall loses its hue with diminished light. The same quantity of black, or the same quantity of darkness, affects but little a deeper tone of the same hue. It is so well known a fact, that one hardly expects to find it adduced with all the apparatus of experiment. But this instance serves to point out the use of careful study of the theoretical side of the colour subjects. Half the mis-

understandings arise from careless terminology; and I can hardly do better, in conclusion, than recommend to all who propose to study or discuss "Colour" the admirable little manual by Professor Church. It is a wonderfully complete synopsis of a most complicated and difficult subject.

#### Brickwork Tests [p. 333].

From JOHN CODD [A.]—

The description of these tests published in the JOURNAL of 2nd April is most interesting; it is perhaps a little premature to lay too much stress upon the results, but the importance of the subject cannot be over-estimated, and its practical bearing must commend it to all interested in building.

It is certainly startling to learn that the strength of brickwork bears, one may almost say, no proportion to the strength of a brick. Surely this points to, if a very usual, at the same time a very faulty method of construction. There are, however, several considerations in addition to the too lavish employment of closers which may to some extent account for the low results obtained.

(1) The experiments appear to have been directed rather to test the power of resistance to a crushing pressure than to test the weight-bearing power of the pier.

(2) As the piers were built upon  $\frac{1}{2}$ -inch iron plates with a bearing of a foot, it is tolerably certain that the crushing force employed would have a tendency to cause a plate of such slight dimension to buckle and so assist deflection, and thus promote the bulging which in most cases appears to have emphasised the failure.

(3) It is practically impossible to bed a brick pier, either at the top or bottom, in such a way that any great pressure applied to it should act equally upon its whole area. In all probability the strain would come upon three or more points, irregularities or projections at the angles or edges of the bricks or elsewhere, and these projections, bearing the greater part of the pressure, would, in some sense, act as wedges thrusting the particles asunder.

(4) The pressure—almost certainly an unequal pressure—was applied to the top of the pier, and might be expected to act upon the pier in a way differing considerably from weight as usually applied, and this pressure was exerted all at once, whereas in actual building the weight is applied very gradually.

(5) The foundation of a brick pier in actual work, be it the natural subsoil or be it concrete, would have a certain elasticity, the tendency of which would be to assist in the formation of a natural bearing. This would not be the case in building upon an iron plate.

(6) The pier not being strutted in any way, the slightest unequal pressure would have a serious destructive tendency.

If these experiments could be supplemented by others approximating more closely to the ordinary methods of building, it is quite possible that far higher results would be obtained.

MR. PHENÉ SPIERS'S PAPER [p. 233].

Saint-Front of Périgueux [p. 362].

From R. PHENÉ SPIERS [F.], F.S.A.—

Professor Baldwin Brown has, I am afraid, misunderstood my statement when in his last communication, speaking of the dome in France, he says, "Mr. Spiers rejects a Byzantine origin and 'claims the feature as indigenous.'" What I stated [p. 250] was, "(2) The *construction* of their 'domes and pendentives is entirely different from 'that found in Byzantine structures, and is, so far 'as I can ascertain, *indigenous to the country*.'" I referred to the construction as indigenous, and not to the feature of the dome.

Professor Brown, however, correctly points out the two questions on the subject which require further elucidation, viz. (1) the origin and early history of the dome in Aquitaine; and (2) the position of Saint-Front in relation to the other domed churches of the district. As regards the first question, I am afraid I am unable to give much more information on this subject than that which is contained in my Paper. The earliest existing pendentive is on the west front of St. Stephen's, 1014-1018; the earliest piers, probably carrying a dome on pendentives, are found at Saint-Astier, 1002-1013. Between these two examples and the small cupolas and squinches at Germignyles-Près (806) I have quite failed to trace any other examples, and yet it seems quite certain that even the pendentive of St. Stephen's (fairly set out as regards its curves, but tentative in the irregular junction between the voussoirs and the filling-in) can only have been the outcome of the trials and developments of many years.

The only additional light I can throw on the subject now is that which is suggested in a letter I received from M. Choisy pointing out a mistake I had made in fig. 15 in the jointing of the lower part of the pendentive: this on a more careful examination of Viollet-Le-Duc's drawing in Gailhabaud I found was wrong, and I corrected it in a footnote [p. 252]. In this letter M. Choisy pointed out also that whilst in its earlier development the two arches probably descended on the impost moulding with a *re-entering angle*, which might be the case if small stones or bricks were used in the construction, with ashlar masonry and a *tas-de-charge* of several courses it would be waste of time, and contrary to the spirit of the Middle Ages, to retain such a feature; and the simplest method would be to set the pendentive out on the intrados, the centre of the curve in horizontal plan being the axis of the main dome. This would account for the shape of the pendentive

up to the top of the highest course of the *tas-de-charge*. The *tas-de-charge* in the Périgordian domes is about one-third of the height of the arch. Above that the arch was built in centering supported by struts on the impost moulding. The next problem was how to continue the curve already generated in that portion of the pendentive contained in the *tas-de-charge*. It is certain here that we are in want of many other tentative efforts prior to the example of St. Stephen's. It is scarcely likely that so fairly regular a form should have been worked out at first; and we might certainly have expected to find, in this western dome, the pendentive which exists in the second dome, where the voussoirs of the arch at the summit are vertical. Unfortunately I have given no section through the existing arch, as shown in fig. 21, but the upper voussoirs project about 4 to 5 inches only in front of the intrados at the summit; the lowest voussoirs, where they become independent of the filling-in, project more than twice that dimension. It was impossible in my Paper to do more than refer to the three methods quoted to me by M. Lambert: viz. (1) where the voussoirs lean over at the top; (2) where the upper voussoir is vertical; in both cases with the voussoirs projecting forward to meet one another at the base of the filling-in; (3) where the voussoirs of the arch are all in a vertical plane with re-entering angles at the base. The varieties of No. 1 are infinite, as will be seen on referring to fig. 22. All this is, however, a digression from the particular point I wished to bring forward, viz. that the origin of the Périgordian pendentive as distinguished from the Byzantine pendentive may be attributed to two causes: 1st, the abundance of timber in France, so that it was not necessary, as in the East, to provide, first, a permanent centering in brick or stone in the form of a rib; and secondly, the resources which the quarries of Périgord afforded in the supply of stone of large dimensions, which enabled them to build up the lower beds of stone of the pendentives in horizontal courses. I am indebted to M. Choisy for the clue which he gave me in his letter of the 11th February, and to the reasons for the difference in construction between the French and Byzantine pendentives.

The other question is of less importance, so far as the arguments in my Paper are concerned, but it is an interesting one to consider. When working tentatively on a new subject, and venturing to upset ancient theories, it is unwise to discard all one's proofs at first; and therefore I was thankful to accept De Verneilh's theory as regards the similitude between St. Mark's and Saint-Front. Professor Baldwin Brown draws attention to Dehio and Bezold's suggestion, which, he says, "seems to give the common sense of the situation." If, however, he bases his belief on their argument that "when the old Latin church was to be rebuilt, 'it would be most in accord with precedent for



"the new structure to take up the site of the old, "and this it would just have done had it received "the long nave of the Latin cross plan, which "occurs elsewhere in the district," this being the paragraph quoted by Professor Baldwin Brown, I am unable to accept it. MM. Dehio and Bezold put forward as their hypothesis that it was originally intended to extend the domed church in a western direction by the inclusion of two more bays each covered with a dome. I am afraid this idea must have occurred to them long after they had visited the building, because an examination of the finish given to the western piers would show that it was always intended the new building should stop there. It is easy to see this on examination of the plan (fig. 2). It will be noted that the great piers carrying the domes are pierced with openings in the centre; if the existing western pier was one of a series which it was intended to carry through to the west end, it would also have been pierced through; but, on the contrary, its western side is solid, and the vaulting of the passage both on the north and south shows it was always intended to be so. The western dome was the first erected, and its size was limited by the width between the confessionals. The more I study the question the more I feel that so great a change in the traditional plan could only have been suggested by a foreign source, foreign, at all events, to Aquitaine, and St. Mark's at Venice contains all the elements required to suggest the new plan. I have examined the plans given of the two churches quoted by Professor Baldwin Brown in Ruprich-Robert's *L'Architecture Normande*, and they seem to me to be passages through to north and south transepts, and to bear no analogy to the piercing on all sides of the original square piers. There is a square-headed niche now filled up on one of the piers of Agen, but it was never pierced through. Several other plans of Périgordian churches are given in De Verneilh, but in none of them is there any suggestion of a niche, much less of a passage carried through.

\* \* The above Reply to Professor Baldwin Brown's previous communication [p. 362], on the subject of Mr. Phené Spiers's Paper, has been submitted to him, with a request, if he desire to answer it, to do so in order that both communications may appear simultaneously. To this he has acceded:

From Professor G. BALDWIN BROWN [*H.A.*], M.A.—

I do not feel called upon to undertake the defence of the views of Herren Dehio and von Bezold upon disputed questions like this one of the original intention of Saint-Front, but I do not quite see why the deliberate judgment of two such writers about a building to which they devote especial attention should be set down by Mr. Spiers as a mere afterthought. We need not agree with all these writers' views, but for all that

they have penned a work which, with all its imperfections, is by a very long way the best book on the general subject of Mediæval architecture that has yet appeared. Here is what they say, and members may judge whether or not it represents what I have called the common-sense of the situation:—

The western arm [of Saint-Front] invades the old basilica in so irregular and unceremonious a manner that at the time it was planned there can have been no thought of preserving the latter and keeping it for joint religious use with the new structure. Just as little, however, can it have been purposed to destroy it without any substitute. To give over to profane use hallowed ground once encircled by the walls of a church would have been quite against the custom of the time. Was there then an intention of carrying on the domed structure to the west end of the old basilica? We are of opinion that there was. The present boundary line of the western arm of the cross is only an arbitrary and apparent one—the real termination of the building it certainly is not. If one imagines two further bays of similar size added on to the western arm, the inner corner of the outermost pillar would exactly reach the inner corner of the end wall of the old church. This accordance cannot be an accidental one, it must have been taken into account from the very first planning out of the domed edifice. With this Saint-Front is taken out of the isolated position it now occupies in the Aquitanian family, and takes its place by the side of Angoulême, Solignac, &c., and nothing more need be said about St. Mark's at Venice. (Dehio und von Bezold, *Die kirchliche Baukunst des Abendlandes* [p. 343].)

If, as Mr. Spiers now says, the western dome of Saint-Front was the first part erected, then this theory would fall to the ground. But where is the proof of this? It occupies the position of the eastern end of the old church which was burned down in 1120. In a case of the kind, when rebuilding was contemplated on an enlarged plan, the new choir would generally be the first thing taken in hand, the old damaged choir being patched up meanwhile for temporary use. Of course, the width of the new church would be properly calculated from the outset, so that when later on the western arm took the place of the old choir, it fitted into its place in relation to the older structures. On p. 254 of Mr. Spiers's Paper he seems to provide technical evidence of a later date for the western arm, as an earlier method of construction is found in the east and north parts of the structure than that used in the west.

Of course, the single passages through the piers I mentioned (which occur at Fontevrault and elsewhere) are not the same thing as the double passages at Saint-Front, but they seem to me to have a very significant likeness, which suggests further inquiry.

I do not feel competent to say anything more on this subject, as my own memory of Saint-Front is too faint, and I must wait till I see it again. In any case this is a by-issue, and does not touch the real value of Mr. Spiers's technical analysis of Saint-Front and its companion churches, for which I for one am sincerely grateful.



## MINUTES. XIII.

At the Sixty-first Annual General Meeting (the Thirtieth General Meeting of the Session), held Monday, 4th May 1896, at 8 p.m., Mr. Aston Webb, F.S.A., *Vice-President*, in the Chair, with 27 Fellows (including 9 members of the Council) and 37 Associates (including 2 members of the Council), the Minutes of the Meeting held 20th April 1896 [p. 388] were taken as read and signed as correct.

The Report of the Council for the official year 1895-96, a copy of which had been previously issued to every member resident in the United Kingdom, having been submitted and taken as read, the Chairman formally moved its adoption, which was seconded by Mr. Alex. Graham [F.], F.S.A., *Vice-President*.

At the Chairman's suggestion the Report was then discussed in three sections, namely (1) The Report generally; (2) The Finance Report; (3) The Grant to the Architectural Association. In the discussion on the first section an objection was raised that the General Body was not kept fully informed on certain matters in which action had been taken by the Council and Standing Committees, particularly with regard to the Plan submitted to the London County Council by the Art Standing Committee in connection with the Holborn to Strand Improvement Scheme; and, on the motion of Mr. H. H. Langston [A.], seconded by Mr. G. A. T. Middleton [A.], it was agreed that the Plan in question should be published in the *JOURNAL*. A suggestion concerning the Conditions of Contract the Chairman stated should receive the consideration of the Council [see Appendix].

Before taking the Accounts, the Chairman directed the following documents to be read:—

*To the Royal Institute of British Architects.*

Gentlemen,—As the Honorary Auditors appointed at the Annual General Meeting of 6th May 1895, and in accordance with By-Law 40, we beg leave to state that we have examined the various accounts placed before us, and have made the necessary inquiries to enable us to append to the Financial Statements for the year ended 31st December 1895 the usual certificate of examination.

The accounts which we have certified have been placed in the form in which the members of the Institute will receive them by the chartered accountants employed by the Council, and no doubt, from a chartered accountant's point of view, they constitute a clear and proper exposition of the financial affairs of the Corporate Body; but we have thought that to the General Body of members it might be useful to present them with a shorter statement of accounts, which they can the more readily understand.

The *Receipts and Expenditure* for the year commencing 1 January and ending 31 December 1895 were as follows:—

Expenditure .....	£5,272 15 5
Receipts .....	5,120 13 5
Deficit .....	£152 2 0

*Balance Sheet of Ordinary Funds, 1st January to 31st December 1895.*

Accounts unpaid.....	£615 19 6
Cash Balance at Bankers', 31st December, to meet these debts .....	114 12 0
Deficiency .....	£501 7 6

As regards the "Income and Expenditure Account" we desire to point out that we believe it is understood that the £100 per annum paid to the Architectural Association ceases, and that no further contribution is to be made to that body without the express sanction of the Institute.

The "Balance Sheet" as printed is somewhat confusing. We may explain, however, that under the head of "Liabilities," the sum of £359. 2s., "Fees anticipatory of election," was expended in 1895, and that the sum of £91. 7s., "Subscriptions received in advance," properly belongs to the 1896 account. Under the head of Assets we find the sum of £124. 8s. 2d. for "New Furniture and Fittings." This is a clear expenditure in 1895. Why, therefore, it should be treated as an "Asset" we are at a loss, as laymen, to understand. Had this sum been inserted under the head of "Expenditure in 1895" the Deficiency before referred to would have been £625. 15s. 8d., instead of £501. 7s. 6d.

The £205. 19s. Cash at Bankers' includes the £91. 7s. subscriptions paid in advance for 1896 to which we have before referred.

The *Real Assets* of the Institute are as follows:—

2½ per cent. Consols, value declared by the Bank of England at the close of business on 30th March 1896...	£1,000	1	0
202 shares of the Architectural Union Co., estimated by the Council of the R.I.B.A. at £14 per share, but which we venture to estimate at, say, £11 per share, and at that price they have to be realised .....	2,222	0	0
Total assets—say	£3,222	1	0

The Accounts unpaid and the amounts receivable are of course to be dealt with.

The items under the head of "Accumulated Fund" and "Property" may be taken *cum grano salis*.

As regards the "Property" the value of which is put down at £9,346. 5s. 7d., we can only express the opinion that the Estimate is very excessive. The real value of this Property is what it would fetch to-day in the market.

An approximate Estimate of its present value would probably be nearer the following figures, viz.—

Furniture and Fittings .....	£500	0	0
Printed Books and Manuscripts ...	3,700	0	0
Oil Paintings .....	250	0	0
Lithographs, Prints, &c., included in above £3,700 ...	0	0	0
Water Colours, Sepia, &c. ....	100	0	0
Models, Plaster Busts, &c.....	10	0	0
Marble Busts .....	50	0	0

\* Total £4,610 0 0

That being the amount of our estimate, we are of opinion that to pay premiums on insurance of £14,000 (the sum for which the property is insured) is an unnecessary expenditure.

The real financial position of the Institute, as disclosed by the above statements, is, in our opinion, such as to deserve the serious consideration of the General Body, and we commend the matter to the earnest attention of the Council, so that it may, in its Annual Report, outline some suggestions for improving the affairs of that Institute in whose welfare every member should take a keen interest.—We are, Gentlemen, your obedient servants,

FREDERICK TODD.  
WILLIAM WOODWARD.

April 18, 1896.

14 Old Jewry Chambers, E.C., 20 April 1896.

To the Secretary R.I.B.A., 9 Conduit Street, W.

DEAR SIR,—Having been invited to comment upon the Report of the Honorary Auditors dated 18th April 1896, we beg to do so as follows:—

In the second portion of the second paragraph, your Honorary Auditors show a deficiency of £501. 7s. 6d. This should be decreased by the item of £113. 6s. 8d. for debtors

\* With reference to this sum of £4,610, I have not had sufficient opportunity of forming an estimate of the realisable value of the items referred to.—FREDERICK TODD.



on last year's account, which we understand has since been received.

The item of £359. 2s. was *not*, as stated by the Auditors, expended in 1895, but mostly in previous years. As a matter of fact, only £78. 15s. was received in 1895 under this head, the other being accumulations of liability in past years, and still remaining so.

The furniture bought last year at a cost of £124. 8s. 2d., and which is still in hand, is as much a "*Real Asset*" as those mentioned by your Auditors a little further on; but as it is a depreciating asset, a certain percentage is written off every year.

We quite agree that the items under "*Property*" should be taken *cum grano salis*, but we would remind you that these are not our valuation, but those of special competent experts appointed by your Institute, viz. Messrs. Quaritch, Rickman, and others—and that it would be presumption on our part to contradict these. We may add, however, that we do not recommend that the amount of insurance should be decreased, as we have been told by one of the members of your Committee that the value put on them was according to that which it would cost you to replace them, and it is to enable you to do this in case of fire that you insure them for £14,000.

We are of opinion that *our* accounts as originally prepared should be issued *alone* to your Members, for we consider the numerous supplemental statements which you propose to print will tend to confuse rather than elucidate. We are, dear Sir, yours faithfully,

SAFFERY, SONS, & Co.

The Financial Report having been discussed [see Appendix], an amendment, moved by Mr. Wm. Woodward [A.] and seconded by Mr. Frederick Todd [F.]—that a committee be appointed to investigate the financial condition of the Institute, and to report thereon to the General Body—was put from the Chair, and lost.

The recommendation of the Council that a sum of £100 be granted for the year 1896 to the Architectural Association in furtherance of its educational work was agreed to. The original Motion was then put, and it was

RESOLVED, *nem. con.*, that the Report of the Council for the official year 1895-96 be approved and adopted.

The lists of attendances of members at the several meetings of the Council and Standing Committees during the official year having been submitted and taken as read [see Supplement, No. 13], scrutineers were appointed to direct the election of the Council and Standing Committees for the ensuing year of office, and report the result thereof to the Business General Meeting of the 8th June, namely, *Fellows*: Maurice B. Adams, Frank T. Baggallay, R. F. Chisholm, Zeph. King, John Norton, J. S. Quilter, Hugh Stannus, Robert Williams; *Associates*: E. R. Barrow, Max. Clarke, H. Vaughan Lanchester, H. H. Langston, C. H. Löhr, H. A. Satchell.

The following members were appointed Auditors for the ensuing year of office, namely, Messrs. Edmund Woodthorpe [F.], M.A., and Owen Fleming [A.].

The Statutory Board of Examiners, which had had occasion to meet but once during the official year, was re-appointed as follows:—Messrs. George Aitichison, Lewis Angell, Francis Chambers, G. Elkington, Banister Fletcher, Charles Fowler, E. Gregg, F. W. H. Hunt, E. B. I'Anson, Robert Kerr, J. Douglass Mathews, Lacy W. Ridge, T. Roger Smith, Benj. Tabberer, and T. H. Watson.

The proceedings then terminated, and the Meeting separated at 10.15 p.m.

#### APPENDIX.

##### Annual Report of the Council.

The motion from the Chair, that the Annual Report be adopted, having been seconded by Mr. Alex. Graham [F.], F.S.A., the following discussion ensued:—

THE CHAIRMAN.—Perhaps it will be convenient if I state at once the course I suggest the Meeting should take in considering this Report. The Report naturally divides itself into three divisions, and I think if we understand that, it will enable us to get through the business quicker. I therefore propose that we should first consider the whole of the Report up to the Finance Report, that is to say, to the end of page 40; that we should then consider the Finance Report (both the report of the expenses and the estimate); and, thirdly, that we should consider the last paragraph in reference to the grant to the Architectural Association. Anyone, therefore, who has any observations to make on the first part of the Report we shall be glad to hear him.

MR. WM. WOODWARD [A.].—Mr. Chairman and Gentlemen: Following the suggestion of the Chairman, I will divide what I have to say into three parts, but not quite the three parts proposed by the Chairman. I propose, first, to speak upon the Report itself; then upon the financial statement; and then upon the position in which the Auditors have appeared with regard to this year's accounts. With regard to the Report, I suppose that the best friends of the Council will hardly consider that it forms satisfactory reading. It does not indicate, nor does it show, any particularly useful work done during the year by the Institute, either for the benefit of the profession in general, or for the members of the Institute in particular. It appears to me rather to indicate the lugubrious meanderings of an almost moribund body, without any sign of that activity and that vitality which are so necessary to the conduct of every Institute of this character. Now, Sir, I will at once proceed to the General Report. On page 9 I find that we have added nine to our list of Fellows, which results in a reduction of ten from the roll of last year. But I am happy to be able to congratulate the Institute upon the fact that we have added to the list of Associates forty-seven, and I can only trust that that addition will be increased as years roll on. On page 36 there is a reference to the Conditions of Contract, which I will read: "A new 'Form of Agreement and Schedule of 'Conditions for Building Contracts,' which received the 'sanction of the Institute last May, was issued to members 'on the 25th July 1895; and the old Paper of 'Heads of 'Conditions' was withdrawn from circulation in accordance with the Resolution of the General Meeting held '13th May 1895. A large number of copies of the new Form 'has already been sold.' Now, Sir, the information which reaches me is that no first-class builder will consent to sign these Conditions of Contract, and, therefore, I am astonished to find that the sale has been so great, and I can only imagine that the sale has been so great by reason of some peculiar interest outside a contract, which minor builders may take in these particular Conditions of Contract. The next observation I have to make is on page 39, where I find, under the heading Art Standing Committee, an alternative scheme for the new street from Holborn to the Strand has been sent to the London County Council. Now, Gentlemen, until I read this Report, except from the report which I have seen in the newspapers, I had no idea that this Institute had sent any plan to the London County Council; and this brings me at once to the JOURNAL. The very *raison d'être* of that JOURNAL is, and must be, usefulness to the General Body—usefulness to the 1,400 who are unable to attend these meetings; and, therefore, unless it contains useful information for the members its right to be ceases. Why is it, Sir, that the JOURNAL did not contain a copy of the Plan which this Institute had prepared for that new street? Surely the Council must be aware that there are men in the Institute who have taken the greatest possible interest in street improvement long before the Art Standing Committee was invented or suggested; and how is it that the comments of those men were not permitted by a reference to the Plan in the JOURNAL; and

what do we find according to this Report? We find that the Plan has received, not the approval of the Committee of the London County Council, but that it has received the approval of the officers of the London County Council, though the Report does not state who those officers are. But surely it would have added much to the dignity of the Institute, if, instead of the Plan which has been sent out by the Institute having received only the approval of the officers, it had received the approval of the Committee of the London County Council. The next remark is on page 40, where we come to the Practice Standing Committee, and I find a reference to Fire Offices, which I will read:—"Amongst the matters considered by the Committee, the chief have been: The payment of architects' fees by Fire Offices in connection with the settlement of fire claims and reinstatement after fires." Then further on you will find that in respect to the first of these the negotiations are still in progress, and that it is hoped that a satisfactory result will be arrived at. Now it was only by accident that I heard some weeks ago that this Council had communicated with the Fire Offices. How is it that the letters which were sent by this Council, and which affected the interests of the profession at large on the question of professional charges, were not published in the JOURNAL? I may tell the gentlemen here, from information received, that the letters which have come from the Institute have done the profession considerable harm. I hear from an authoritative source—[Mr. E. W. GRUNING [F.]: Name it.] I shall not name it. Whether those letters have done harm or not—whether they were or were not for the benefit of the Institute at large—they ought to appear in the JOURNAL, so that we might know. [Mr. GRUNING: It can be of no possible use, and it may be of the greatest possible harm, to publish letters pending discussion and negotiations.] I deny the right of the Council to pledge the credit of the Institute. These letters are not supposed to come from the Council, but from the Institute. With regard to the new street, I have heard it said the Royal Institute of British Architects has submitted a Plan for a new street; not that the Council or the Art Standing Committee have, but the Institute, and I say these letters ought to appear in the JOURNAL, so that we might have an opportunity of criticising them, and of, perhaps, giving them our entire support. Another matter which I heard, practically by accident, or, rather, which appears in *The Building News*, was this. The Art Standing Committee addressed letters to, and received letters from, a certain committee in Exeter with regard to a church. How is it that those letters do not appear in the JOURNAL of the Institute? The Council of the Institute have received a snub from the Exeter Committee, and I should very much like to have seen the correspondence appearing in the JOURNAL, which would, as I say, bear testimony to its useful existence. I do trust that, when matters affecting the interests of the profession generally are taken in hand by the Council, those matters shall be brought before the General Body in a proper way. With regard to the Science Standing Committee, I must say that they have done excellent work, at all events in one section, and that is on the brickwork testing. For that work or any similar work they deserve entire credit, and for my part I beg to extend that credit to them.

Mr. JOHN SLATER [F.], B.A.—I should like, as an individual member of the Council, to state that Mr. Woodward is absolutely inaccurate in his statement that the new Conditions of Contract have met with the disapproval of all the first-class builders. There was a great deal of discussion, as you know, in this room about the Conditions of Contract, and there was a great deal of difference of opinion about them. Before they were absolutely settled by the Institute I happened to adopt them, and I sent a copy of the Conditions to a firm of first-class builders. It

was the first time they had seen them, and they came to my office and declared them to be the very best set of Conditions they had ever seen.

Mr. WM. WOODWARD [A.].—May I remark with regard to that that Mr. A. A. Hudson read a Paper the other night at the Surveyors' Institution, and I heard him say—and this is an observation which Mr. E. T. Hall will lay to heart—that the old Conditions of Contract were far better than the new?

Mr. ROBERT WILLIAMS [F.].—I had no intention to speak on the matter, but it so happens that last week I had a tender from a firm that I think can be called one in the highest class of builders in London—I need not name them. I may say that the firm tendered alone, and there was no competition. I had added a copy of the Conditions to the specification, and had modified it to suit the conditions of the particular contract. They added to the bottom of the tender that the contract was to come up for approval. Now when I saw one of the parties afterwards, or one of the heads of the firm, he told me that they had not signed one of those conditions. They are in a large way: they had several large contracts in hand at the time. I do not know whether they have entered into any of those since the issue of the Conditions, but they said they did not think they would be able to sign them. The contract is still under consideration because the amount is being modified. I shall know at the end of the week whether they will sign them or not. It points to what Mr. Woodward says, that some of the first-class builders in London will probably refuse to sign the conditions.

Mr. E. T. HALL [F.].—As my name has been mentioned, I think I might say one word on this point. It is well known in this room, and Mr. Woodward would not be ashamed to admit it, that Mr. Woodward was the staunch opponent of the new Conditions. He spoke stronger than anyone against them, and they were carried by a unanimous vote, first of the Practice Committee, next of the Council, and lastly by this meeting, Mr. Woodward alone dissenting. [Mr. WOODWARD: How many were present?] They have been published only a few months, and over 1,000 copies have been sold. I think that is the best answer that can be given. Why some of the leading builders have objected Mr. Woodward must be perfectly conscious. It is because the Institute of Builders is trying to set itself against them; and at their last general meeting special reference was made by, I think, the President, or one of the leading officials, that they hoped the builders would only sign the conditions of the Institute of Builders, which, of course, meant asking the builders not to sign these. Every impartial person who has looked into them has said what Mr. Slater has told you, that they are an absolutely fair set of conditions. The fact of 1,000 having been sold in so short a time is an answer to Mr. Woodward without any further comment. If it is of any interest to the Meeting to know it, I may say that not long ago the solicitor to the Institute told me that he had recommended clients of his own to use them because he believed they were the best. The solicitor who advised the Practice Committee has told me himself that he has advised his own clients, builders and others, to use them, and they are solicitors who know what they are talking about. They recommend them, and people buy them largely; and I think if we find the sales go on as they are going on that will be quite sufficient. It will, at all events, lead Mr. Woodward, I hope, to think that other people do not take the same view of them that he does himself. With regard to Mr. Woodward's comment on the action of the Practice Committee with regard to the Fire Office claims, it must be known to every man of business that nothing would be more injurious to the profession than to publish a correspondence while negotiation is going on. It would be absolutely contrary to all precedent in the Institute to do



it, and I should say contrary to the precedent of any sensible man who entered into negotiations, which would be just one way of getting erroneous criticism on business letters when the whole thing was not before you. When it is before you, and when it is completed, it will be brought up here, of course, for the sanction of the Institute. But that is how all committee work must be done. It would be perfectly ridiculous for a committee to submit everything it did to a public meeting; no business could be done. It is quite bad enough to have a committee of twenty men to deal with a thing, but if you have to deal with a public meeting at every step, nothing can be done.

MR. WILLIAM WOODWARD [A.].—I contend that the Practice Committee have no right to enter into this correspondence without authority.

MR. E. A. GRUNING [F.].—I happen to be Chairman of the Practice Committee, and we are elected by the General Body of the Institute. We are not a Committee of the Council, and we have every right to do what we do on behalf of the Institute.

MR. ROBERT WILLIAMS [F.].—I will add one word, if I may, to this effect: I had one builder who was willing to sign the Conditions last week; he had them to read, and when he had signed he asked whether they were the Conditions of the Institute of Architects. I might say that the builder is not one of the very rich builders, but he is capable of doing quite as good work. At the same time, what I said before holds good.

MR. C. FORSTER HAYWARD [F.], F.S.A.—I did not think there was any discussion likely to deal with this particular point of the Conditions of Contract, but I am happy to say I have used them. In a large contract I had to make with one of the chief builders in London there was no question made in regard to the Conditions; and as the amount was over £20,000 it was not a small matter. The Conditions were accepted just as they stand, and I am very well satisfied with them, and always glad to use them. There is one point, however, and that is, they should be published without the Contract form on the front. There may be various reasons why the Contract form as it stands should not be adopted, and I should like to use the Conditions just as they stand without that form attached to them. It looks very awkward in a document to have the first page crossed out and begun on the second page with the Conditions, and I trust the Institute will revise the form, print them on foolscap, and let the Contract form be a separate matter altogether. So far I would say I differ from Mr. Woodward. But there is one point in which I must agree with him, and that is, with regard to the plan sent in from the Institute to the London County Council for a new street. For twenty years having been myself interested in plans for this new street, and as a member of the Institute, I feel I ought to have had some intimation of what was being done. I certainly think that the members of the Institute should have been informed, and a copy of the Plan sent round to all.

MR. H. H. LANGSTON [A.].—With regard to that little matter which the last speaker has referred to, I think it would be of interest to the General Body if the Council gave us some assurance that the Institute should have an opportunity of seeing this Plan before it is submitted again for further consideration to the County Council, especially as you made a remark that a new Improvement Committee has recently been appointed. Before it goes out as the Plan of the Institute, I think it is only right that we, as members of the Institute, should see the Plan, and I move to that effect.

MR. G. A. T. MIDDLETON [A.].—I second that.

MR. BERESFORD PITE [A.].—As a member of the Art Committee that had to deal with this matter, may I point out to the Meeting that this matter came before the

Art Committee as soon as the County Council scheme was before their Improvement Committee? The Art Committee of the Institute felt that while the County Council were digesting and preparing their scheme, the matter was in such a position that the Art Committee might very well consider it at the same time. With the view to making any possible suggestions, the Art Committee sat and appointed a sub-Committee, which looked into the whole matter. If I were to mention the names of the sub-Committee I am sure it would give satisfaction. Mr. Belcher, Mr. William Young, and other gentlemen who have great experience in these matters were on the sub-Committee, and gave a great deal of time to it. Their report, which amounted to an improvement of the County Council Plan, was submitted without any delay to the Council, and forwarded without any delay—delay would have been prejudicial to the movement—to the County Council. I believe the issue of the matter is still before the County Council; they did not at that time adopt the Institute Plan, but the County Council are now themselves, I venture to hope, coming to the conclusion that the Plan forwarded by the Council was one that it would be highly advisable to reconsider if not to adopt, and we are living in hopes in the Art Committee of seeing our Plan carried out. I should like to suggest to the members that if the proposal of the Art Committee had to be submitted to the Institute, notice would have had to be given, or a public meeting would have had to be called; and as members no doubt would be acting for clients with interests in the heart of London, there would have been no end to the discussion of that Plan, and I think it would have been quite impossible for us as an Institute and public body to have dealt with this matter in any way at all beneficially to the community, unless by appointing a small Committee of experts and dealing with the matter upon their advice. Gentlemen must be quite aware how difficult it is for a Committee to write a letter. How much more difficult, then, for a Committee to make a plan, and infinitely more impossible for a whole body to make a plan! I think the Committee may take to itself this comfort in the matter, that their action is most themselves to be followed with beneficial results—results which I do not think we should have arrived at if we had had a public discussion as to the advisability of taking this property or that property, or diverting the road from this man's property or from the other.

MR. C. H. BRODIE [A.].—With regard to the matter connected with the church at Exeter, mentioned by Mr. Woodward, I know something about that, and I took part in some correspondence in the local papers. Mr. Woodward seems to be under the impression that a snub was administered to the Institute. I found no such snub in the correspondence. [MR. WOODWARD: Read *The Building News* of 7th February.] I regret to say I do not take any notice whatever of what *The Building News* says. I had the whole of the letters which appeared in the local press on the subject, and I shall be very pleased to let Mr. Woodward have them for his information; he would then, I think, arrive at the same conclusion as I did. The result of the action of the Institute—or a result, at any rate, largely due to the action of the Institute—has been to defeat the purpose of certain members of the Committee appointed for the purpose of rebuilding a church at Exeter, who were striving to upset the decision of an assessor, an eminent member of the Institute. Those gentlemen did not succeed. The wish of the Institute, namely, that the Committee should adopt a plan approved and recommended by the assessor, was, at a vestry meeting, carried out, and the vestry as a body accepted the plan of our friend Mr. Caröe for the erection of the church, and I believe he will be entrusted with its erection, if the erection be proceeded with. With regard to the proposed street, I think I may tell Mr. Wood-

ward that the "Institute Plan," as he calls it, has been adopted by the St. Giles's District Board of Works; and if I read the daily papers aright, the Plan has made such an impression on the new Improvement Committee of the County Council that they have withdrawn their own Plan, and are now considering this.

THE CHAIRMAN.—Mr. Langston has proposed, and Mr. Middleton has seconded, that this Plan should be published. I cannot imagine that the Institute or the Council would have the least possible objection to that Plan being published; and if the members generally wish it, no doubt arrangements will be made that it should be published. It would be very interesting at this stage that it should be.

MR. MAURICE B. ADAMS [F.].—With regard to the Conditions of Contract which have been discussed this evening, I should like to add my testimony to their usefulness. I have found them extremely useful, and they appear to me to be rendered more so by the Form which Mr. Forster Hayward objected to. I have found that they are accepted by the vestry clerks without any demur, and that it is extremely convenient to have a document of that kind to place before a committee; it prevents a lot of questions being raised on the contract.

MR. G. H. FELLOWES PRYNNE [F.].—I was about to raise several questions, on the Conditions of Contract especially, but at the same time I must say I shall be very glad to give my testimony to their very great usefulness. I fully agree with what Mr. Hayward has said as to the advantage of having the Agreement kept separate. I think it would be really a more complete document.

THE CHAIRMAN.—I think I may promise that that will also be considered by the Council; and, if there be no objection to it, it will be done.

### The Finance Report.

THE CHAIRMAN.—Before we go to the accounts, or second portion of the Report, I will ask the Clerk to read the Auditors' Report [see page 411]. I think the meeting ought to have that before them when they consider the finances. That Report has been sent to our Accountants, who have drawn these accounts up, and they have written us a letter, which will also be read [see pages 411-12]. Mr. Saffery, our Accountant, is here to-night, and will be able to give any explanation on the technical points, as to the way in which the account is put before the Institute, which Mr. Woodward or any other gentleman would like to have. We are anxious to explain everything that we can as clearly as possible.

MR. WILLIAM WOODWARD [A.].—With regard to the estimate I have formed of the value of the property of the Institute, I will ask members just to consider for one moment what would be likely to be obtained for the busts which are scattered about these rooms, and I will also point out with regard to the Report of the Chartered Accountants that it would be impossible to replace the oil paintings. Therefore, to attempt to insure them for what may be assumed to be the estimated value is, to my mind at all events, incurring an expense not necessary. You could not replace these portraits, and the value attached to them is absolutely absurd; the real value is the respect in which the departed are held by the members of the Institute, and by reason, Sir, of the eminence of the artists that painted the pictures. [THE HONORARY SECRETARY: That is all the more reason for insuring them highly.] That may be. My statement was that it was impossible to replace them. You have read the Auditors' Report at a moment when it is somewhat difficult for me to follow the particular line of observations I proposed to myself; and therefore, instead of observing now upon some of the items which I consider represent extravagance on the part of the Council, you throw me upon the main question upon which I have

proposed to move a resolution. I will ask you, Gentlemen, to consider first that the Auditors of the Institute are appointed by the Institute and not by the Council, and if you refer to By-law 35 you will find this: "The Council shall present a Report on the state of the property and affairs of the Royal Institute to the Annual General Meeting, which report shall give an abstract of the proceedings during the official year, an account of the funds (including a balance-sheet of the receipts and disbursements for the past year properly audited), and an estimate of the income and expenditure for the current year." Now I ask you to allow me to read By-law 40, which is as follows: "The Royal Institute shall annually elect as Auditors one Fellow and one Associate, not members of the Council. Candidates shall be nominated for the office at the Annual General Meeting on the first Monday in May, and their names shall be appended to the list of the Council nominated for election. The Auditors shall have access at all reasonable times to the accounts and securities. They shall examine the securities and the annual accounts before the latter are submitted to the Annual General Meeting, and shall report thereon to the Royal Institute." Last year the Honorary Auditors, in compliance with this By-law, prepared a Report. [THE HONORARY SECRETARY: Not in compliance with the By-law.] We were elected Auditors, and it was in compliance with what we conceived to be our duty as having been appointed by the Institute. Last year we prepared our Report, and if that Report is to be of any service at all it must go out with the Report of the Council in order to give the General Body—the 1,400, not the 100 here to-night—an opportunity of digesting it, and coming here with intelligence to analyse every figure in it. The Council, last year, would not publish that Report with their own Report, and the reasons assigned were these—that we had exceeded our duties as Auditors; that we had entered into recommendations of economies which formed no part of the Auditors' duty; and when it was read, as this Report was read to-night, it was absolutely impossible to follow it. You will bear in mind that the Auditors have spent hours on these accounts, and therefore they are necessarily in a better position to judge of the effect of figures than merely from the Report which is read to-night, and thrown at your intellects without an opportunity of thoroughly digesting it. It is impossible for any set of men, I venture to say, to digest accounts in detail merely from the reading of the Report; but knowing that the reason urged last year would probably be urged this year against publishing that Report, we most carefully abstained from recommending any economies, and we religiously adhered to figures only, with the result which you have heard read. What is the result? The result is a continual deficit—a deficit which increases year by year (*vide* the Balance Sheet); and if the Institute is to go on to success, bearing in mind the fact that the same Council practically which has permitted the deficit in years past is the Council which is now in existence, and which is very likely to continue the deficit in future, I say, Sir, that the time has come when some steps should be taken by the General Body to investigate the expenditure, and to see if the Institute cannot be placed upon a more substantial basis financially. Therefore, Sir, I am about to move a resolution; but before doing so permit me to direct your attention to the legal expenses incurred by the Council. I find that the sum of £16. 1s. 4d. was incurred in law charges in connection with the Papers read at the Meetings. I should like to know, and no doubt some members of the Finance Committee will tell you, why this £16. 1s. 4d. was incurred in reference to the Papers. I also should like to be informed why £36. 11s. was incurred in connection with the Duke of Devonshire's Drawings; why £18. 19s. 6d. was incurred in respect of the District



Surveyors; and why £21. 17s. was incurred in connection with the Conditions of Contract item. Then there is £31. 2s. for charges *re* Registration Bill. I think the time has come when we might cease to oppose the Registration Bill. There are many members of the Institute who consider the Registration Bill would be a good thing, and I think the time has come when we should cease to expend large sums of money in law charges thereon. But the item I particularly refer to is an item of £173. 19s. 6d., which has been incurred in law charges in relation to an unfortunate squabble with our landlords—a series of blunders which has resulted, as I say, in an expenditure on law charges alone, besides taking the officials of the Institute from their legitimate work, of a sum of £173. 19s. 6d. I should like a proper explanation of why it was. The Auditors have opportunities of getting at figures which the General Body have not. Now I will come to the items of costs. The Defendant's costs were £55, the Plaintiff's were £81. 11s. 2d. [Mr. BERESFORD PITE and Mr. E. T. HALL objected that they could not follow the speaker, as none of the items he referred to appeared in the accounts before the Meeting.] The greater part of those charges are in the account, but the balance I have ascertained is not in this year's account. The total amount expended on these charges is, as I stated, £173. 19s. 6d., and I say that it is due to this Institute that some explanation is made, first of all, why you got into this squabble. There are many men of legal minds on the Council of the Institute, and I do not see why we should be led into this extravagance, altogether, so far as I can judge, unnecessary. There are many other items to which I should have liked to refer; but I will now move the Resolution, and I may tell you that I originally intended to move a much stronger one, but which would not be too strong. I have had, however, the pleasure of an interview with Professor Kerr, who has taken a great interest in these accounts from year to year, and Professor Kerr authorised me to state that he regretted he could not be here to support me in this Resolution. The Resolution is:—"That a Committee be appointed to investigate the financial condition of the Institute, and to report thereon to the General Body. The Committee to consist of four members, to be elected by this Meeting, none of whom shall be members of Council "or of the Standing Committees, and four members to be appointed by the Council." Now, Sir, I say we must bear in mind the fact that there is a deficit year by year—if I had had the opportunity I think I could have shown that there are many items of extravagance which the Council have incurred, and that it would be perfectly possible to carry on the affairs of the Institute in a first-class manner with greater economy. I am sure with regard to the officers of the Institute (and I have had considerable opportunity of judging of their work in the past), from Mr. White downwards, I believe the men do their work exceedingly well, and that they are not by any means overpaid. I should like to see some of the salaries increased, but that cannot be until you increase the strength of our finances. The question as to how these economies might be obtained would be one for the Committee. Year by year we do find a deficit; year by year we find, as I say, that there are no substantial attempts to minimise the expenditure which I feel in many directions there might be; and I do think the time has arrived when for the interests of the corporate body such a Committee as this should be appointed. You will observe that I say the Council should have four members, and that there should be four business men selected from this Meeting to serve on that Committee, and report. If they find there is no retrenchment possible to meet this deficit, all it means is that you must sell out some of your Consols, and get rid of some of your Architectural Union Company shares, and gradually you will

be reduced to a state of finance which will not provide for any weakness in the future. I trust that weakness will not arise. I trust the Institute will stand, as it does now, the Corporate Body distinctly representing the best interests of the profession, and I ask the members present to support me, not with any antagonism to the Council, but with a sincere desire that the Royal Institute shall be placed upon a sound financial basis. I therefore beg to move the Resolution which I have proposed.

Mr. FREDERICK TODD [F].—I have great pleasure in seconding the Resolution, and as one of the Auditors I should like to say a few words. The Auditor, we have been informed in this place, has a divided individuality. In his report as Auditor (we have been told) he is not to make suggestions, but in his other character, that of a private member of the Institute, he is at liberty to make such observations and propositions as he thinks fit. In the latter character, namely, that of a free lance, I wish to make a few observations upon two of the items which appear in the Statement of Accounts, and, after doing so, to make a suggestion, and that on the part of the electorate at large who are mostly interested in the object sought to be obtained. The first item to which I direct your attention is the cost incurred by the Institute in the matter of the JOURNAL, and which, in my judgment, is monstrously high for a paper of that class, and which cost appears to be gradually growing in amount year by year, as shown by the following. I find on reference that the gross cost of the JOURNAL for the year ending December 1893 is stated at £1,001. 5s. 11d., and the net cost £697. 14s. 2d.; that in the year ending December 1894 the gross cost of the JOURNAL is stated at £1,182. 3s., and the net cost at £839. 5s. 9d. (an addition of £142 over that of 1893); and in the last year ending December 1895 the gross cost was £1,327. 13s. 2d., and the net cost £916. 7s. 7d. (an addition of £77 over that of 1894). I am of the opinion that a considerable sum could be saved to the Institute in regard to the expenses, and that without seriously affecting any diminution either to the intrinsic value or to the public interest in the said JOURNAL. The second item to which I call attention is to the deficit which now in the accounts annually makes its appearance, and which also has been gradually increasing in amount during late years. I find on reference that at the end of 1893 the deficit was some £129; at the end of 1894 it was some £286 (more than double that of the former year); and at the end of last year the liability had arisen to some £625 (more than double again that of the preceding year. What it will be at the close of this I know not, but trust it will not show the same ratio of progression. The Accountants have mentioned in their note (placed at the foot of the accounts) that over £3,000 liquid assets were available to pay these "liabilities"—which is perfectly true, though, I confess, a very cold comfort when we reflect that in the year 1888 there was £4,000 in Consols belonging to the Institute, but which is now reduced to £1,000. I make no comment on the foregoing figures, but allow them to speak for themselves; to me, however, they point forcibly to the result which it may reasonably be expected to overtake the Institute if prudential measures be not taken in time to avert same. I can only hope that the men to be elected on the Finance Committee will be men of business capacity. Relative to the suggestion to which I alluded at the commencement, it is as follows:—It must be in the remembrance of most of the Gentlemen here present that in the Report of the Auditors of last year the law charges which had been unnecessarily (so it was thought) incurred on behalf of the Institute by the Council were commented upon, and attention was drawn to the profitless result of that expenditure—upon which subject, Gentlemen, I have no wish to dwell now, and over which I charitably draw a veil. I think we all had

expected that the timely admonition conveyed in the aforesaid Report would have received that attention which it deserved, and borne the result of greater circumspection being practised in the future. But, Gentlemen, we have received no such consolation; other law business has been entered upon, resulting, as that of the former year, in melancholy failure, defeat, and loss, and which I think is a loss not to be assessed at a pecuniary amount, but what is far more important, that of the loss of status to the Institute. The sum thus debited to the Institute on account of these law charges amounts altogether (I think) to over £400—a very considerable call on our exchequer. Taking into consideration the present condition of the finances, and also bearing in mind that the greater part of these law expenses has been incurred by the Council in pursuit of objects unsought for by many of the electorate, I think it would be doing a graceful act by the Council if they were to refund (and out of their own personalty) the said sums which have been debited to the Institute on account of the unfortunate actions on their part; and particularly when it is remembered that many of the members of the Council have retained their offices for many years, during which period they have received the honours and advantages consequent and attendant upon their respective offices. That, Sir, is my suggestion, and in leaving the subject for consideration I wish to convey to the Council the assurance that in making it I am not instigated by unworthy motives, and by none other than those in the interest of the Institute, and also with all kindly feeling to the Council; and such will, I hope, be received on their part in a similar spirit.

MR. G. A. T. MIDDLETON [4].—I do not think the JOURNAL should be a source of loss to the Institute. For some years I have had experience in a similar affair, the *Journal* of the Society of Architects, and it is no secret that that journal has always paid its way, and never cost the Society a single penny. If that little journal did so, how is it the Institute JOURNAL is such an expense? The secret of their financial success with the journal has been the advertisements. A very large sum indeed is to be got for advertisements in a journal such as that of the Royal Institute, and I feel sure that if properly worked the JOURNAL, instead of being a source of loss, might be a source of actual profit. It should at least pay its own expense of printing, and in all probability the advertisements should bring in enough also to pay the expense of issue to the members.

THE CHAIRMAN.—Perhaps at this stage I might state one or two facts which will clear the ground a little. Mr. Woodward has said if he had had an opportunity he would have liked to have brought forward a good many items in the account which showed extravagance. I was anxious to give him every possible opportunity. I thought that we had made that clear to him. I was desirous he should have a perfectly fair and open ground to state everything that he wished, and it was for that reason I tried to stop interruption. Mr. Woodward asked for some explanation as to the legal charges. I have not got exactly the items, but I think the first was £16 in connection with the JOURNAL. That was caused by its being thought necessary and advisable, as is done in other Societies, to have an agreement with the readers of Papers granting the copyright to the Institute when they read them. It is now the custom when anyone is good enough to read a Paper here to ask him to give the copyright to the Institute, and that necessitated a form of agreement, which, of course, had to be drawn by the solicitors. Then with regard to the charges in connection with the Devonshire drawings, I really cannot understand anybody objecting to a charge of that sort. We had a magnificent gift from the Duke of Devonshire, on certain conditions, of a series of autograph drawings. They were given us on trust, and the

Trust Deed had, of course, to be prepared by the solicitors; and I am sure Mr. Woodward or anyone else would not for a moment wish that we should not pay the expenses of that deed, which was the only expense we incurred in obtaining that interesting series of drawings. With regard to the expenses in reference to the Registration Bill no one regrets more than the Council that we should be put to that annual expense, but at present we are under the requisition of the General Body to oppose. They have always up to the present time opposed this Registration Bill. We expend as small a sum as we possibly can; but as long as that Bill is brought forward, and the members of this Institute are of the feeling that they at present are, I am afraid that we must still expend it, or you would very properly find fault with us if that Bill were allowed to pass without any effort on our part to oppose it. With regard to the legal expenses in reference to the galleries downstairs which Mr. Woodward has referred to, that is a long story which has given us a great deal of trouble and a great deal of anxiety, and I am afraid it is difficult for me to explain the whole matter to you; but as shortly as I can state it, it is this: Downstairs, as you know, there are galleries called the Conduit Street and the Maddox Street galleries. These galleries were built by the Architectural Union Company, and they were erected for architectural and other art purposes, as was stated, and especially for the Royal Institute of British Architects and architectural exhibitions. That was the statement on the face of the Articles of Association. The galleries in Maddox Street have been unlet for some time. We have incurred loss of income nearly to the amount of £100 last year in connection with this Company, and which accounts largely for our deficit. Owing to those galleries being unlet, and to certain arrears of the Secretary of the Company, the dividends were very much reduced. When the whole of the galleries came in hand, and had to be let, the Council of the Institute considered whether it would be possible for them in any way to acquire them. I think everyone here, and everyone who has gone into the question, would admit that if we could have become tenants of this building entirely it would have been very much to the advantage of the Institute, and also of the Company. We ascertained an offer was made by some auctioneers for the galleries. It seemed to us to be a most undesirable thing that these galleries, which are entered through the same entrance as ours, should be in the hands of auctioneers. The Architectural Association at the time were on the look-out for rooms. We conferred with them to see whether, if we took them, they could assist by taking a portion for their use. It appeared to us, rightly or wrongly, that it would be an advantage to the Institute, and would be an advantage to the Association, if we were to lodge under one roof. We should also at the same time have had the additional advantage of acquiring these galleries for the purpose for which undoubtedly they were originally built. The Association, although the accommodation was not altogether what they wanted, were prepared to take a portion on terms which were agreed between us, and we thought we could see our way to use them for Examinations, exhibitions of prize drawings, soirées, and other purposes. It would have been of great advantage to us to have our soirées again here, to have had the work of the Institute carried on solely in this building. We could have seen our way to let a portion of the Conduit Street galleries for a certain sum every year to societies who at present hold them, and we calculated that after these deductions the rent to the Institute would have been an additional £200 a year. We did not feel the Institute finances were in such a condition as to permit of our increasing the rent to that extent, and we went, in anticipation of Mr. Todd's suggestion, to our own mem-



bers, members of the Council and others, to see whether we could obtain a guarantee of that rent for a certain number of years. I may say that we obtained £170 a year for five years without any trouble, and we should have had no difficulty in obtaining the £200 a year for five years. We therefore made an offer to the Architectural Union Company to take these galleries for five years, the time which this guarantee would have covered. Unfortunately, the Directors of the Company preferred the auctioneers. We at the time, of course, were acting under the advice of our solicitors, and it seemed to us so wrong that the original object of these galleries should be diverted from the Institute, and put into the hands of auctioneers, that we decided, after every effort had been made—and most reluctantly we decided—to try whether the Directors really could divert these galleries from the purposes for which they were built, and we went to the Court and obtained an interim injunction to prevent their letting them to the auctioneers. However, these matters are decided by a counting of heads, and as soon as it became obvious that the Directors would have a majority of the shareholders, which at one time we hoped they would not have, we at once withdrew and gave way to the logic of events. We were not going in for a long law suit, and spending more money. As far as it went it was, of course, a costly business; but I think, Gentlemen, that you would have blamed us, I am sure you would, if we had not made every effort we possibly could under proper advice to preserve those galleries to us, and it is a matter of the greatest regret to the Council that they have gone, and are now in the hands of auctioneers, who have no interest whatever in architecture or the purpose for which those galleries were originally built. I am sorry to have kept you so long over that; I will be much shorter over the rest. With regard to the JOURNAL, I cannot follow Mr. Todd at all about that. Probably you know that the Council decided some years ago to put the JOURNAL and TRANSACTIONS into one, and they estimated at that time there would be a saving of from £400 to £500 a year. As a matter of fact, the JOURNAL now has a saving of over £400 a year. We have taken the greatest possible trouble to go into that. We have had meetings, and have gone into it in the greatest detail, and I can assure you on the authority of the Finance Committee that there has been that saving. The JOURNAL, I think, is well worthy of the Institute, and I do not really think we could possibly make it pay itself and do ourselves credit. But there is one very promising thing in reference to it that you must have noticed in the accounts, and that is, for the advertisements for which we used to receive £250 we shall now receive £500 in the year, so that in the estimate which is published, and which is before you for the next year, you will find that the cost of the JOURNAL will be considerably further reduced. With regard to the deficit, which has been naturally and very properly referred to, because on an occasion of this sort we expect to hear criticisms, that deficit is not really so serious as it may appear. I believe Mr. Saffery, who is here, will support me in stating that the actual debt of the Institute at the present moment is £388 odd. It is quite true that in the accounts outstanding creditors stand at £615; but you will find on the other side of the account cash at Bankers', and also arrears of £113, which have since been paid in. That brings the other side to £300 odd, and our actual indebtedness to £388. An estimate for the coming year shows a surplus of £185, that is exclusive of any grant to the Association. Of course that will be reduced if the grant be made. We are on the turn of the tide. We have gradually been paying off the great expense we have had in improving the premises downstairs and upstairs, and the only reason I may say that we did not publish Mr. Woodward's Report (which I am sorry to find he feels and

takes as an affront which was not intended) was that our Accountants said, "Do not publish anything but the plain, straightforward account which we have prepared." I am quite sure that is the proper way to do it. Anybody who wishes can ascertain from those accounts exactly the state of the Institute. We repudiate, of course, entirely Mr. Woodward's valuation of the property, because we are not at all prepared to say that any one gentleman could have valued the different properties that are here. With regard to the furniture, £124, the amount which Mr. Woodward states should not have been put to capital, we have written off such matters as electric light, repairs to this room, the painting, and so forth, and have paid them out of income, and we do not put these to capital because we do not consider we could get anything for them; but furniture and things of that sort are an asset, and we have the value of our money.

Mr. WILLIAM WOODWARD [A.].—May I say, with regard to the item of expenditure on furniture, that I do not object so much to it under the head of assets, as I do that it did not appear as part of the expenditure of 1895?

THE CHAIRMAN.—It appears on the balance-sheet because it is a capital expenditure, which we are advised is the proper way of making it appear. I hope I have answered all the questions that have been raised. If not, I shall be pleased to do so.

Mr. ZEPH. KING [F.].—May I ask, Mr. Chairman, whether you dissent altogether from Mr. Woodward's criticism? Is there any intention on your part to oppose the Committee being formed as he suggests, so that it should look into the matter? Mr. Woodward has no interest in raising any feeling against the Council. I think his idea and his desire are that everything should be known, and that the Institute should be put on a safe footing so far as finances go, and you ought not to look upon it as any personal feeling on his part, but a desire that we should do something to prevent the Institute from going down and down until it becomes ruined. I ask you to consider whether a committee such as has been proposed and seconded should not be appointed to look into those matters.

Mr. H. H. LANGSTON [A.].—Sir, I shall certainly support Mr. Woodward's Resolution, in spite of your explanations, and I have listened most carefully to them. There, nevertheless, remains this deficit, to which the accounts draw notice, and if there was no note of alarm sounded by either of the Honorary Auditors appointed, there at least is before us a fact that we have steadily to face, and it would be most wholesome to the Corporate Body that we should inquire, with no slight hand at all, but with an earnestness that we intend and that we are determined to continue the representative body of British architects, and not to feel as this note of alarm certainly makes me feel. We should not, I submit, calmly take year after year a Report such as this, and look at it as if it were nothing at all, and pass it over, and comfort ourselves with some idea that in the future we shall be right again. Money is drifting away out of our pocket, and we shall have to meet that in some way or another, and if we do not meet it calmly and properly now, it will get worse every year—or at least you have not given us the hope that it is going to be made less every year. It impresses me as important that this mask—for I cannot apply to it any other term—should be ripped off the face, if it is on the face of the present Council—so that we may see behind what these individual expenses are which have been incurred as stated by one of the Honorary Auditors. It is not fair. We are all members of the Institute. We are anxious it should continue, and should prosper. It has passed its jubilee year, and it has done a good act in that year, and I want it still to continue to represent the profession in the country. That is so much in support of the

Resolution. In regard to the value of the copyright, I fail to see that there is any advantage in making those things copyright. If we would wipe away some of that incrustation that seems to surround us, that seems to keep us from being recognised by the British public as a necessity among civilised people—if we would only take every opportunity of letting our opinions be known to the public, we must not be so selfish as to make every Paper read in this room copyright. Let our opinions be known to others, and let them copy and copy as much as they like if there be any value in it. I think that was a most unnecessary expense. I think it was an item of over £16. With these observations I shall certainly support the Resolution, and I hope it will be carried.

Mr. JOHN SLATER [F.], B.A.—I shall not detain the Meeting more than a few minutes, but I wish to controvert in the strongest way I can the statements that have been made by one or two people that we are getting worse and worse. It is absolutely untrue, and I for one, as a member of the Council for some years past, should not have the slightest objection to this Committee of Investigation, because I am quite sure if it were elected, and if it did look into the accounts, it would see as clearly as the Council now do the facts as they are, and it would ascertain that there has been no lavish expenditure, that there has been no extravagance, and that, as a matter of fact, instead of getting from bad to worse, we are getting better and better every year. I have not heard a word to-night from Mr. Woodward, who professes to have the interests of the Institute at heart to such an extent that he thinks this Committee essential—I have not heard a word about the estimate which has been formed. As you, Sir, know, better than any one, and as I, as a member of the Finance Committee know, this estimate for the coming year has been most carefully looked into. What is the estimate we publish for the coming year? We say we can never foresee accidental occurrences, we can never foresee some special expenditure we may have to make, such as in reference to M. Chedanne's drawings, and things of that kind; but after the best possible view we can give to the forthcoming year we say the Institute may hope for a balance on the right side of £180. Where is the going from bad to worse? I say I maintain that we are going from good to better. [Mr. WILLIAM WOODWARD: That is an estimate.] Of course it is an estimate, and we must make an estimate. As a matter of fact, the Council are not omniscient, the Council are as liable to mistakes as other people; but I maintain that the Council have done their best for the past few years, which have been years of great anxiety to the Council; they have done their very best to promote the interests of the Institute, and they have done all they can to put the finances of the Institute on a sound basis, and, looking at the estimates they have formed for the next year, I say there is no need for fear on the part of the members of the Institute with regard to the financial prospects; there is no need for alarm; on the contrary there is a very fair prospect that at the end of the next year we shall be in a position to say that we have now in this particular year got an income which has exceeded our expenditure by a very perceptible amount. Members seem to entirely forget in the remarks that have been made in this room to-night the excessive expenditure that we have incurred during the last five or six years. What have we done? You know, and members here who care to go into the matter may ascertain the fact, that we have improved these premises. Mr. Todd said that a few years ago our Consols stood at a certain amount, and now they have been depreciated, and we have sold out. That is perfectly true. But what have we done in the course of the last few years? We have purchased £1,146 worth of Architectural Union shares; we have paid for alterations to the premises £1,533;

and we have paid for fittings and other special expenditure over £1,000; and to meet that expenditure we have sold out £2,800 of Consols. That means to anybody who looks at the Finance Account with a rational eye that we have devoted a very large amount of our annual income to increasing the value of the premises to the General Body; and although, as I said before, I should have no possible objection to this Committee being appointed, I say there is no need for it, that the Council have done the best they can, and they have put forward an estimate for the coming year which shows that the deficit is not going to increase but to diminish. There is one point, of course, of which no notice has been taken—that for the last four years we have given £100 a year to the Architectural Association. That is an expenditure on the part of the Institute which I thoroughly endorse and have always supported, and notwithstanding the fact that if we give it to them in this next year we shall diminish the balance which we expect to have, and it is possible that if other serious items of expenditure come before us that we shall not have a balance at all, I for one shall offer no opposition to that grant being made again. But I would ask the Institute to remember that this is an expenditure which, so far as the Institute was concerned, there was no occasion for us to expend; but the Council felt, and the Institute supported them in the feeling, that it was a very essential thing to give assistance to the Architectural Association, a body which is so closely related to us, and a body which most of us are members of, and have the greatest possible respect for. I maintain there is no occasion whatever for this Committee, and I do certainly hope that this meeting to-night will not support the Resolution of Mr. Woodward. If the estimate be looked at in the proper spirit it will be seen there is no need whatever for any Committee of Investigation now.

THE CHAIRMAN.—I am not at all sure that, according to the by-law, this Motion of which no notice has been given can be put; but we are of course anxious not to stifle any discussion; therefore I think I had better now put Mr. Woodward's proposal, which is seconded by Mr. Todd.

Mr. E. T. HALL [F.].—Sir, if I may be allowed to say so, this Motion is put a little too hurriedly. In the first place it is absolutely out of order and contrary to By-law 56, which states that "notice of any Motion intended to be submitted to a Business Meeting must be given to the Secretary at least fourteen days before the date of such Meeting." Now upon that I would make this observation: if there is anything in this Motion at all, it is a Motion which has for its basis the alleged fact that the Council have been doing something which requires investigation. Now, Sir, I have never known in any public body or in any public company a committee such as this appointed, unless there has been grave cause shown to make the members believe that something wrong has been done, and I venture to suggest that such a Motion as this is a vote of censure on the Council. [Mr. WOODWARD.—There was no suggestion on my part, and I repudiate it, that any wrong was done by the Council.] I venture to suggest that this, if it is anything at all, is a motion of censure on the Council. It can have no other meaning whatever. Now, Sir, in the first place, the Institute entrusts exclusively by the Charter the management of its expenditure and its affairs to the Council of the Institute. The duties and responsibilities cannot be taken away from them if fifty committees be appointed, because the Charter throws it upon them; therefore, if the Council have been guilty of anything—I shall not say that is improper, but any reckless or unjustifiable expenditure or lack of judgment, the proper and only constitutional course is to dismiss that Council and elect another. Now, Sir, we do hope



to hear some argument which shows that there is a basis for the criticism offered to us. What is it that Mr. Woodward has said? He has made a report, and he has made a valuation of the property of the Institute which shows that we have a valuation here which to all intents and purposes is absurd—that he, not having been appointed valuer for the Institute, but Auditor, says it is about three times what it ought to be. We should expect that he would give some evidence of the fact. The gentlemen who made this valuation some four years ago were Messrs. Rickman, Quaritch, and our late friend Wyatt Papworth. Would anyone suggest you could select three better gentlemen to make a valuation, men who thoroughly knew what they were doing? And against that valuation we have, not a valuation of the Auditors, but of Mr. Woodward, because Mr. Todd says he knew nothing about it. Mr. Woodward says we only make an estimate. Of course it is an estimate, but it is an estimate that is based on common sense. I will endeavour in a few words to show you that it is. We shall probably have a balance, because we shall get £250 a year more income for advertisements in the JOURNAL. That is not an estimate; that is based on the fact of a contract. It is therefore reasonable to say that we have £250 a year more to deal with. We further have reduced by £425 per annum the cost of the JOURNAL. That shows that we are diminishing our expenditure, and therefore it is probable, if we can continue to diminish that expenditure, we shall have a surplus; therefore the estimate is based on common sense. Then it has been asked, How is it we have had all this money expenditure? Among other things we have increased the payment to the Soane Medallists from £50 a year to £100 a year. That is one way in which we have spent our money—and a very good way too. We have, as pointed out by Mr. Slater, given considerable sums of money to the Architectural Association—an excellent thing to do. We have, as Mr. Slater showed you, spent £4,000 in investments or in improvements on this place, and that I think is again a sound and sensible expenditure; but it accounts for deficits. When you spend money in this way those things are not likely to come again. We are not likely to spend £3,000 or £4,000 on these premises for the remainder of our lease, and it is probable, not having that expenditure, that we should have more money to deal with. Then, Sir, it is fair to remark that we have had the misfortune to have our income diminished by the fact of these expenditures. We had an income from Consols in 1893 of £183, in 1895 we only had £77, so that again showed one reason why we should have less balance. Then we had in like manner less income from the Architectural Union Company's shares during the past year than we had before. On all those facts—because those are facts, not speculations—there is every presumption that we shall next year have this balance which is estimated—or have a balance, because out of that I personally hope, when we come to the third division, that we shall reduce it by another grant to the Association. That being so, I have merely addressed these observations to you and to this Meeting with the view of expressing my most earnest hope that the proposer and seconder of the Motion will withdraw it. I think, as I have said before, it cannot be put; but it seems to me that, however it may be, it is a reflection on the Council's management, and I think as such it ought not to be voted by this Meeting. I hope it will not even be submitted to the Meeting.

THE CHAIRMAN.—Mr. Woodward, are you content now with the discussion that has taken place, or do you still press your Amendment?

MR. WM. WOODWARD [A.].—Bearing in mind the fact that I have acted as Honorary Auditor of the Institute on

three, perhaps four, occasions, and that the Council have not published, which is a grievance to me, the Auditors' Report, and that we have only done what we conceive to be our duty to the General Body, I do not intend to withdraw the Resolution.

[The Amendment was thereupon put, and lost.]

### The Grant to the Architectural Association.

THE CHAIRMAN.—With regard to the third matter, the grant to the Architectural Association, referred to in the concluding paragraph of the Report, that, of course, has already been approved formally by you as part of the Report, and it is therefore before you as a recommendation from the Council.

MR. BERESFORD PITE [A.].—Might I venture, as briefly as possible, in support of the recommendation, to give the Institute the following figures? The Architectural Association has prepared practically 689 students in every year during the past five years for the Institute Examinations. During this year the actual number would be 138 students, and the Association is practically dependent upon the support of the Institute in this matter. I would only put it before the Institute, as the best possible investment of money, to invest it in education.

MR. WM. WOODWARD [A.].—As the Association appears to rely for its existence on the Institute, I certainly shall not oppose the vote.

[The recommendation was then agreed to.]

THE CHAIRMAN.—It only remains to put this Report *en bloc* which we have practically now passed. [The Motion was put, and carried unanimously.]

## ALLIED SOCIETIES.

### OFFICERS AND COUNCILS 1896-97.

#### The Birmingham Association.

President, Mr. William Henman [F.]; Vice-President, Mr. Charles E. Bateman [A.]; Treasurer, Mr. Arthur Harrison; Librarian, Mr. A. E. McKewan; Auditors, Messrs. H. B. Guest and Arthur Short; Hon. Secretaries, Messrs. Herbert T. Buckland and C. Silk; Council, Messrs. W. H. Bidlake [A.], M.A., J. A. Cossius, Wm. Hale [F.], H. R. Lloyd [A.], E. C. Bewlay, A. J. Dunn [A.], and E. F. Reynolds.

#### The Manchester Society.

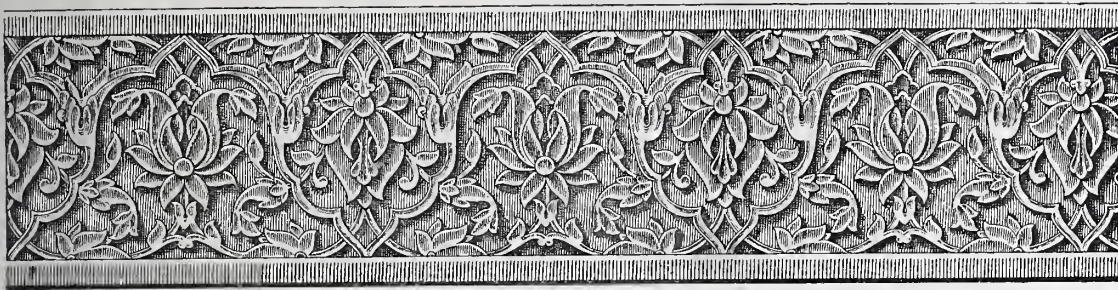
President, Mr. John Ely [F.]; Vice-Presidents, Messrs. R. I. Bennett [F.] and R. Knill Freeman [F.]; Hon. Secretary and Treasurer, Mr. Paul Ogden [F.]; Assistant Hon. Secretary, Mr. Edward Hewitt [F.]; Members of Council, Messrs. Thos. Chadwick [A.], A. H. Davies-Colley [A.], John Eaton [F.], John Holden [F.], F. W. Mee, J. D. Mould [A.], W. A. Royle [F.], Edward Salomons [F.], J. H. Woodhouse [F.], J. S. Hodgson, H. E. Stelfox [A.], and P. S. Worthington [A.], M.A.

#### The Nottingham Society.

President, Mr. A. N. Bromley [F.]; Vice-President, Mr. A. H. Goodall; Council, Messrs. A. R. Calvert, W. A. Heazell [F.], John Howitt [F.], W. D. Pratt, and Ernest R. Sutton; Auditors, Messrs. A. W. Brewill [F.] and John Sauder; Hon. Secretary and Treasurer, Mr. A. Ernest Heazell.

#### The Bristol Society.

President, Mr. Wm. L. Bernard [F.]; Vice-Presidents, Messrs. W. V. Gongh and T. S. Pope; Council, Messrs. E. W. Barnes [F.], James Hart, J. H. La Trobe [F.], J. Wood, J. Foster Wood [F.], F. W. Wills; Hon. Secretary and Treasurer, Mr. F. Bligh Bond [A.].



BARODA PALACE: THE TOWN RESIDENCE OF H.H. SIR SYAJI RAO, G.C.S.I., Maharaja Sahib Gaekwar. By ROBERT FELLOWES CHISHOLM [F.], Fellow of Madras University.

Read at the General Meeting, Monday, 18th May 1896; and registered at Stationers' Hall as the property of the Royal Institute.

COME before you this evening with considerable diffidence, because I feel that the description of a palace built on the other side of the world, in a style with which few of you are acquainted, can scarcely enlist your sympathies; and although I purpose to touch lightly other matters in connection with our art, I am but too conscious that my subject falls below the high standard of the excellent Papers you are in the habit of listening to in this room. On the other hand, the ties between India and England are continually drawing closer, and the interests of the two countries becoming more intimately involved. The palace of His Highness Sir Syaji Rao, Gaekwar, is probably the most costly structure erected by a private individual during the present century. It seems expedient, therefore, that a description of it should find place in the annals of the Institute, and on these grounds I beg to claim your indulgence this evening.

The name of the palace, Lakshmivilāsa, is derived from Lakshmi, the goddess of wealth and prosperity, and Vilāsa, play or sport. The title may be rendered in English as the abode where wealth and prosperity revel. The building was designed and actually commenced by the late Major Mant, R.E. When this gentleman died, the general drawings to a scale of eight feet to the inch were completed; the half-inch scale enlargements for the entire lower storey, and the better part of the second storey; also a considerable number of full-size working drawings of ornament by the late Mr. Hasjee, a native draughtsman specially trained for this work. In actual work, the foundations were laid, and the superstructure raised some six or seven feet above the top of the plinth. It was at this stage that His Highness the Gaekwar asked me to take over the work, and to carry it forward to completion, as far as possible according to the intentions and designs of Major Mant. This I have conscientiously done. Whatever merits the building possesses are due to the ability of Major Mant and his assistant, Mr. Fotheringay. The one or two alterations which affect the appearance of the building, and for which I consider myself responsible, I shall explain further on.

The building measures about 500 feet in length by 150 feet in breadth, and, roughly speaking, covers an area of 60,000 superficial feet. Calculating the towers full to the base of the finials, the building contains above the ground-line 2,930,000 cubic feet. The total cost, including the mosaic work and decorations, amounted to thirty lacs of rupees, which works out to about 1s. 2½d. per cubic foot enclosed. At the average rate of exchange, the cost would be about £180,000. The structure consists of three groups of apartments: the public rooms, with their courtyard approached by a porch on the north side; the Maharaja's rooms, with their



two courtyards approached by a porch on the west side ; and the ladies' apartments, with their courtyard approached by a porch on the south-west. The palace stands by itself in an open park. The materials employed are brick, with sandstone facing throughout ; the greater number of the columns are of marble. A considerable quantity of red sandstone from Agra, and blue trap from Poona, is made use of for the purpose of varying the colours of the surface. The floors were intended to be supported by teak-wood beams and joists, but at my earnest request they were made fireproof throughout by iron joists and girders carrying arches on the lower flanges, and filled in with concrete. These floors are heavy, but perfectly noiseless, and under ordinary circumstances fireproof, as only the lower flanges of the girders are exposed.

In describing the building it will be convenient, I think, if I divide my subject into the following heads :—(a) The Plan of the Palace ; (b) The Exterior ; (c) The Interior.

(a) The Plan, as an architectural composition, has many commendable points. It must be kept in view that the native Rajas and chiefs of India are passing through a transitional period ; that an old palace like that at Ambur would be about as useless to the present Gaekwar of Baroda as to an ordinary English gentleman. An architect must, therefore, look well in advance, and, in planning, consider the future more than the present. Most of the old palaces of India have been built at various periods, but, when complete, they all contain certain well-marked features. First, the entrance gateway, surmounted by the *Nowbut Khana*, or drum-house. This leads to an open courtyard, around which are grouped the public offices of the Raja ; and at the palace side, the Hall of Audience, or *Durbar Hall*, sometimes open as at Agra, or sometimes with its separate courtyard as at Ambur ; beyond this a courtyard around which are situated the private apartments of the Raja, his relatives and *mankarees* ; and beyond these, again, an inner courtyard surrounded by the *Zenana*, or ladies' apartments. The whole of these groups are either enclosed by high walls, or have houses of one storey built up quite close to the exterior. Applying this typical plan to *Lakshmilâsa*, we find Major Mant embodies the same well-marked features, and arranges them in the same way, but with an eye to an architectural elevation.

Now that the building has been actually constructed, we may learn from it two lessons. First, that it was an error to have made the major axis of the palace lie north and south, in place of parallel with the sun's path east and west ; and, secondly, having so placed the axis, deep verandahs should have run along the west face. In the tropics too much attention cannot be bestowed on the position of the main axis of a building. In Baroda, for instance, the sun practically does not travel north, and a building lying parallel with the sun's path, while requiring verandahs on the south, should have none on the north side ; and, again, in buildings situated as this one is, the rooms on the west without deep verandahs are scarcely habitable after three o'clock in the afternoon. I imagine Major Mant to be in no way responsible for the error of placing the axis of the building north and south. Possibly he conformed to native prejudice—although I must say I have never yet met a native who did not at once give way on this point when the matter was fully explained to him. In regard to the absence of verandahs on the west face, I cannot help thinking that Major Mant erred in judgment : he wanted doubtless to give a solid character to the building, and sacrificed comfort to gain this end. Apart from these slight errors of judgment, Major Mant has grasped the problem of the plan in a masterly way, for it exactly coincides with the typical plan described above, while the opening out of the sides at once adds the external character which so many old Indian palaces lack. In omitting verandahs on the west face, I am afraid Major Mant shirked a problem which every European architect has to meet when designing for the East. These necessary, and indeed in some positions indispensable, features always convey to the beholder a light or cage-like appearance to the exterior, which detracts from the solidity and

consequently the dignity of a structure ; and there is in most designs by European architects a disposition to omit verandahs as much as possible. I cannot remember any modern Eastern design in which the amount of wall-space and the amount of verandah are justly balanced. Either we have too much verandah, which conveys a fragile, unstable appearance, or too little, which suggests a hot and uncomfortable interior. I will return to this point again when dealing with the exterior. In India, where one practically lives in the open air the greater part of the year, it is desirable that rooms on the east, south, and west should not only be shaded by verandahs, but, if possible, there should be in front of every room an open terrace.

It will be seen that such features can readily be secured if the rooms are stepped back as they rise in storeys ; and in some old palaces and buildings this expedient is adopted. Although a good sky-line may be thus obtained, the practice is hardly commendable, on account of the elevation becoming less imposing as the building is approached. There is only one palace in India which I have seen wherein the conditions of privacy, these features of terraces in front of rooms, and at the same time an imposing elevation are all secured, and that is the old palace of Dattia, a city about twenty miles north of Jhansi. The plan of this building is so instructive that a short description of it may not be out of place. Dattia palace is built on a hill. In plan it is a perfect square, approached from the city side by the usual outer courtyard. By reducing the number and width of the rooms as the floors rise, open terraces are provided in front of each room on the *inside*, while the external walls rise vertically to the full height of the building. I regret that I was unable to obtain any photograph of this remarkable building, but the framed oil sketch on the wall will give you some idea of the outline. Even now, half-ruined and shorn of its external features, it possesses great beauty ; and when all the domes were covered with Mooltan tiles, and the outer surface softened with the exquisite lace-like perforated marble and stone common to this style, the general effect must have been singularly beautiful and pleasing.

I will now take up the second section of my subject—(b) The Exterior ; and here I feel it incumbent on me to render an account of my stewardship. In comparing the drawing of the building as designed and the drawing of the building as finished, alterations are observable which undoubtedly affect the general appearance of the building. First, in the roof of the Durbar Hall ; secondly, in the main tower ; and thirdly, in the principal dome.

In regard to the first, I hold (and doubtless there are many architects who share my views) that the roof of a building gives a stronger impress of character or style than the mere language of detail. Whether residence in a hot climate has made me keener or over-fastidious I cannot say, but to me the admixture of flat roofs of one material and pitched roofs of another material grates as much as seeing a gentleman in a frock-coat finished off with a bowler. When I turn to the works of the past I find the old architects most particular to preserve unity in their roofs. Domes and cupolas are associated with flat roofs, or roofs of low pitch ; spires and flèches with roofs of high pitch. Indeed, in the north of Italy it was not uncommon when the main roofs were pitched to hide a dome externally by a series of galleries roofed with tiles like the main roof, and so to preserve unity. With an eye tutored to flat roofs, the modern fashion of sticking little pieces of flat on the sides of slopes seems to me a fair matter for discussion. If these pieces are better flat, why not make the whole flat ? The matter doubtless is one of feeling, but the eye becomes so easily tutored to anything bad that we should always guard ourselves from retrograde movements. Holding these views, whatever way I looked at this pitched roof among the flats of Lakshmivilāsa, it became an eyesore ; and as His Highness the Gaekwar wanted a large terrace for dancing, he readily fell in with my idea of making the roof of the Durbar Hall flat.



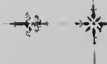
The second alteration affecting the external appearance was remodelling the tower. At the time of Major Mant's death he had discovered that the weight per foot superficial on the foundations of the tower was from two to three tons, and he had written a letter to the State authorities begging that this part of the work might be taken up and the base widened, so as to relieve the pressure on the foundations. This letter was placed before me. I recommended the State to allow the work to stand, because in my opinion the tower was the least satisfactory part of Major Mant's design, and the large clock and chimes objectionable, partly because the clock would give the building a public rather than a palatial appearance, and partly because the chimes would be a nuisance to the occupants. I know few things more unpleasant during a hot and restless night than to hear every quarter of an hour of one's existence merrily but mockingly chimed away to eternity. If these features were omitted I undertook to build the tower to the same height without laying on the foundations more than  $1\frac{1}{4}$  ton per foot, and the Government of the State agreed to the alteration.

The design of the main dome I altered for constructive reasons. It was designed of brick faced with stone, and I feel certain Major Mant would himself have altered this system of construction in the working designs. This form of construction is not to be recommended even in walls; but domes so constructed could not stand, I think, unless both the brick and the stone were each by itself sufficiently strong to ensure stability. Two different materials, subject to different degrees of compression and different degrees of expansion and contraction, cannot jointly perform service. I constructed the dome entirely of stone without a centre, and, having to re-design it, I lighted the base with windows.

With these three exceptions I have made no alteration which would affect the appearance of the structure, endeavouring according to my lights to carry out the structure entirely as it was originally designed.

The style of the building, to use an objectionable word, is a late period of what Fergusson happily calls Hindoo-Saracenic. It stands about midway between the old red sandstone work at Agra and the marble-work which succeeded it, when the ornamentation bore the distinct impress of European hands. Although most of the detail seems to come from Bhurtpoor, there is in the working drawings especially a feeling of regard for the purer local Guzerati style; and this feeling becomes more marked as the working drawings of the lower storey approach the south side, where local forms have been cleverly fused with the more florid art. The bedpost form of column—a characteristic of the late Hindoo-Saracenic—is unknown in Guzerat and Katiawar, and it is not an easy thing to fuse such antagonistic forms, and at the same time to avoid the grotesque. One of the defects of the style to an English eye is the general monotony of the outline, the constant repetition of vertical and horizontal lines; and this monotony grows with familiarity. Turning to the palace under consideration, too much praise cannot be bestowed on Major Mant for the way in which he has broken the sky-line in the Zenana face by the egg-shaped domes. They are most pleasing, and eminently suggestive of great variety of treatment.

To sum up, the exterior, from an architectural point of view, is a distinct advance on most modern Indian buildings, as a successful attempt to combine native details with the ordinary requirements of a modern palace and arrangement of rooms. Beyond this, however, I do not consider that it solves any architectural problem. A modern Indian building, apart from the different treatment arising from aspect, requires a specific treatment on the south, east, and west—a treatment which is acknowledged in almost every building yet constructed, but which has not yet, so far as I am aware, passed into a lithic form. What I allude to is this: In an arcade or verandah in front of rooms, say 18 feet high from



BARODA PALACE, PLAN OF FIRST FLOOR.





floor to floor, it is desirable to have the lower 6 feet and the upper 2 feet of the external wall entirely open. Between these points the remaining 10 feet should admit air but not sunshine, and the two open spaces should be further protected by sunshades. In Calcutta, the City of Palaces, the old style is Palladian, and the 10 feet of space alluded to is closed by placing venetian frames between the columns.

These venetians are usually painted green, and take the place of blinds. In Bombay, at the time when the city suddenly rose in wealth and importance, a few clever architects introduced the then fashionable Venetian Gothic, and had these gentlemen remained in the country, I quite think they would have eventually evolved a style eminently suited to the requirements. As matters stand, however, arcades of arches replace the former Palladian style, and after completion all kinds of expedients are resorted to in order to block out the sun's rays. Thus it seems clear that neither trabeated nor arcaded verandahs exactly answer the requirements, both being subsequently considerably modified by blinds or wood-work. In many public buildings the Government authorities, with the most praiseworthy firmness, have discountenanced any such defacement of handsome façades; but the inmates suffer. In those parts of India where the old materials are found, and the old traditional arts still linger among the people, the native styles may be adopted wholesale fearlessly; and Colonel Jacob at Jeypore and Mr. Harris at Gwalior have done much and excellent work in this direction; but in the majority of places the old styles must be modified, not only to suit the requirements, but to suit the materials.

Mentioning Colonel Jacob's name, I trust it may not be out of place if I venture to express my high appreciation of the invaluable services he has rendered to Indian architects by the publication of the series of details of Indian architecture. I have seen buildings designed by Englishmen in a native style, carried out by natives themselves, with ornamentation of the most atrocious kind, and yet the public are so generally ignorant of detail that both they and the producers seem perfectly satisfied. This is the more to be wondered at seeing that in the case of the particular building I have now in my mind's eye, a walk of a few hundred yards down the bazaar, and a halt at probably the first sweetstuff-vendor's shop, would have shown the ornament intended by the architect in all its purity. Colonel Jacob's publications will do for Indian architecture what photography has done for painting generally. Builders in native styles will have as little excuse now for bad ornament as an artist in these days of photography has for careless drawing.

Speaking generally of our art in India, I think I may say that during my thirty-seven years' residence the progress has not kept pace with the progress in other parts of the world. Mere change of fashion has too often been hailed as actual progress; but people forget that the cutters, the cloth, and the tailors are the same—the fashion only has changed: Bombay, being the richest place, should have made greater strides than any other city.

One of the defects of the late Hindoo-Saracenic is its structural untruthfulness. At the same time it may be open to question whether our ideas on this point are not a little puritanical, for concealment of effort, and concealment of the means by which effects are produced, seem really to be a quality of high artistic manifestation; and most undoubtedly while the work is new, and the whole appears carved out of a solid block, this form of art possesses a charm of its own. Turning from the defects of the style to its beauties, we find it fairylike in lightness and marvellous in bold corbelling. Neither of these attributes appears commendable from a constructive point of view, and both cause the unfortunate builders a vast amount of anxiety; but the result, when achieved, produces that fragile look which seems a quality of simple loveliness. The central feature is 45 feet high, and projects 5 feet: it is surmounted by a stone Howda dome, and the whole of



this vast mass of masonry is apparently carried on twelve corbels! Of course, the stones of the side walls are carefully pinned into the main wall, and these carry the whole of the upper portion. Were it not for this expedient, the corbels would fail. Much of the corbelled work in other parts of the building is equally bold. There are two charming little balconies surmounted by stone hoods and domes on the south side of the building, well worthy of a glance.

In regard to detail, an architect inspecting the forms critically will see evidence of European feeling in much of the ornament and many of the forms. There is a thought of Venice in many of the arches, a more decided feeling of Gothic in others, and towards the south end of the building a distinct leaning to an earlier and somewhat purer type of art. Still I think, on the whole, you will acquit Major Mant of any desire to attain variety at the expense of unity, and this is probably the highest praise that can be bestowed on any modern work.

I now turn to the third head of my subject—the interior.\* The surfaces of the floors are covered with marble mosaic, marble slabbing, or Minton tiles. These materials, which seem peculiarly suited to India, are in reality the worst that could have been selected. The natives of India in their houses invariably walk about without shoes—the wealthy in their stockings, and the poorer barefooted—and all complain that, except during the very hot weather, these materials strike coldly on the feet. It follows that the most costly mosaics are hidden by carpets; and in many apartments of this palace I am, by the desire of His Highness, substituting teakwood for tiles, or laying teakwood over the tiles. It was Major Mant's intention to make an extensive use of parquet floors, but the fierce heat of Baroda alternating with the excessive moisture during the rainy season would, I think, very soon destroy a parquet floor. This material has been used at Secunderabad with a result that can hardly be called satisfactory.

The Durbar Hall, at the north end of the building, is a handsome apartment, about 92 feet long by 54 feet wide, and 48 feet high to the underside of the ceiling. The floor is of Venetian mosaics, executed by the Venice and Murano Company, and put down by twelve Italian workmen, who spent about eighteen months in Baroda. The dado is of Carrara marble, inlaid with Venetian mosaics. All the spandrels of the openings are filled in with Venetian mosaics on a gold ground, and four recesses have groups of statuary representing Painting, Poetry, Sculpture, and Architecture, executed by the eminent Italian sculptor Signor Felici, who came to India expressly for the purpose of beautifying the building. A bronze figure by this sculptor adorns the standard of the main staircase.

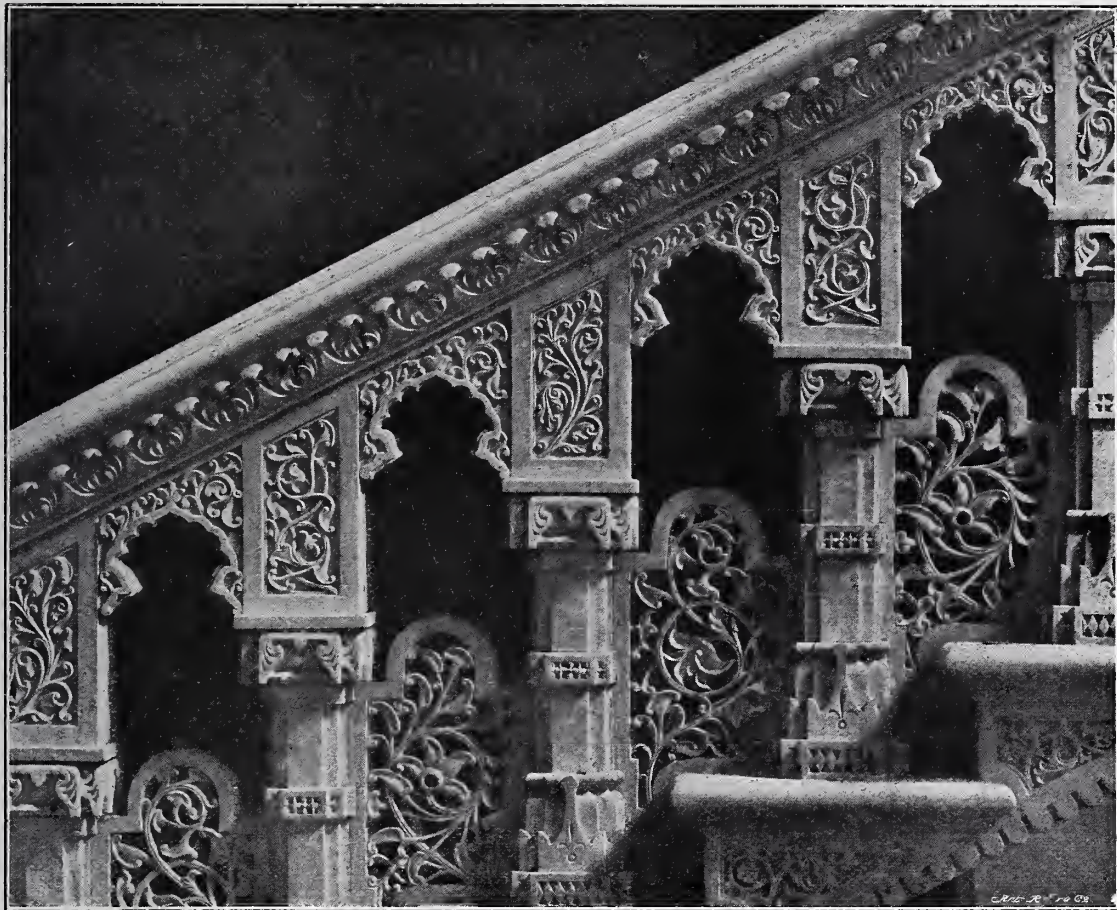
The ladies' gallery is of elaborately carved teakwood filled in with the beautiful Deoder tracery from Pinjra. Four very beautiful stained-glass windows executed by Mr. Dix, of London, fill the eastern lights. The designs for the latter and for the mosaics were based on designs sent from India. The ceiling, I am sorry to say, is a failure. It was necessary to make it of some material which leaks would not injure, because it is quite impossible to prevent an occasional leak in a flat roof of such vast dimensions. After a good deal of discussion we hit upon enamelled iron, and obtained a specimen from an eminent firm in London. We subjected this specimen to every test we could think of but the right one! We did not soak it in a bath for three days and then expose its back to heat. We have found out, alas! too late, that this treatment crazes the surface, and causes pieces to detach themselves and fall. At the end of each rainy season the floor of the hall is covered every morning with small pieces of enamel,

\* I may mention that Major Mant left no working drawings showing how he intended to finish the interior. The sections shown on the 8-feet-to-an-inch drawings con-

tain indications of ornament too slight to be enlarged. The whole of the interior details were worked out entirely by myself.—R. F. C.

and this continues, according to the state of the weather, for several days. It is now about nine years since the ceiling was executed, and large quantities of the enamel have fallen. I wrote to the manufacturers, but they could suggest no remedy. How this material behaves in other places I know not. In India, I am sorry to say, it is a failure.

The walls are coated with fine Madras chunam. On a previous occasion when I had the honour of reading a Paper in this room I described this excellent material.\* At Baroda, when I imported the men and materials from Madras, my Baroda workmen were much annoyed, and declared they could do as good or better work if I allowed them to use powdered marble



MARBLE BALUSTRADE OF THE MAIN STAIRCASE, BARODA PALACE. DESIGNED BY R. F. CHISHOLM.

and other ingredients. There were two recesses in the hall exactly similar, so I had a kind of competition, promising my Baroda workmen that if their work was as good as the Madrasees' work, I would not hesitate to send the Madras workmen back. When the two recesses were newly finished, there was no perceptible difference in their appearance; but, after the lapse of a month, the local work was riddled with fine cracks, something like the crazed glaze on Satsuma ware, and it lost lustre; indeed, the local workmen never again alluded to the subject. I may mention that most of the columns in the hall are of Carrara marble, and

\* "Tiroomal Naik's Palace, Madura," by R. F. Chisholm [TRANSACTIONS 1875-76, p. 159].



although it is nine or ten years since the plaster was executed, the purity and texture of the surface of the plaster do not suffer by the juxtaposition of the white marble.

The main staircase [p. 425] is of Carrara marble of an Oriental pattern, and this I have decorated with gold lines picked out with fine lines of vermilion on either side, after the manner of the Delhi interiors. The effect is particularly good, the vermilion throwing a pleasing glow of richness into the marble and gold.

In both the apartments alluded to, the ornament is flat, and all variety is obtained by colour and gilding. In the remainder of the rooms I prepared the ornament round the doors and windows with raised plaster-work before decorating. I found it quite impossible to make drawings for all this ornament, and the system I adopted was as follows:—After the first smooth coat of plaster was dry, scaffolds were erected so that I could reach every part of the wall and ceiling. I then drew the ornament on the wall itself with charcoal—the workmen then traced my drawings, and the work was executed from these tracings. All the rooms with the exception of three were then painted and gilded. Neither the painting nor gilding in India is good of its kind. A firm in Calcutta, I believe, obtained experienced workmen from England, but the rates were more than I thought it advisable to give. The natives of India are most apt to learn anything, but in order to teach them you must be able to do the thing yourself with your own hands; I can gild better than they can, and paint better than they can, but in neither the one nor the other am I an expert. At my request His Highness obtained a good London painter and gilder, Mr. Tree, and the work done subsequent to this expert's arrival is almost as good as English work.

So far as I was able I regulated every tint applied to the walls, and painted pieces of all ornaments. It was while engaged on a piece of painting, towards the close of the undertaking, that the scaffold gave way, and among other injuries I broke my thigh-bone—but architects obtain no medals for wounds received in action!

It was His Highness's intention at one time to permit me to design all the furniture and fittings of the palace, in keeping more or less with the general style of the building, and so to spend the money among his own people and improve their arts. A large stock of timber was purchased for this purpose, but it was found that the time required was too great. The various rooms were eventually furnished by different eminent firms in London, Paris, Calcutta, Bombay, and Madras.

In addition to the furniture, His Highness has taken the greatest pains to stock his palace with articles of vertu—good oil-paintings, Sèvres vases, Minton and Doulton ware—and for sculpture, Signor Felici, who executed the bassi-relievi of the Durbar Hall, has resided in India every cold season for the past five years, and executed many groups for His Highness of purely native subjects. Mr. Ravi Varma, of Travancore, a man of great genius, who unfortunately never had the advantage of proper academical training, was commissioned by His Highness to paint twelve large pictures of Indian mythological subjects, which now adorn the Gadi Room. You will see from the above that His Highness the Maharaja has not only been a liberal patron of the arts generally, but an especial patron of native art where native art existed.

In conclusion I would say that the arrangements made by Major Mant for carrying on the work were excellent. Mr. Hasji, the detail draughtsman, was educated by drawing from actual work, and on his death he was succeeded by Mr. Guimput Singh, who had a similar course of instruction in the first place under Colonel Jacob, and latterly under myself. Mr. Modi, the clerk of the works, held that post until ill-health compelled him to retire; subsequently death happily released him from a state worse than death. He was succeeded by Mr. Harrischund Gopall, who is only now retiring after serving the State for ten years. The cook's rooms and servants' offices, originally placed in the building, were subsequently



BARODA PALACE. FRONT ELEVATION AS CONSTRUCTED.

Scale of Feet.





constructed on the outside. As it was considered too costly to adopt the style of the building, I employed a rustic half-timbered style, which lends itself admirably to adornment at the hands of native woodcarvers.

His Highness the Maharaja has been most anxious that the grounds and parks surrounding this and his other palaces should be laid out to the best advantage. With this end in view he obtained the services of Mr. Goldring, of Kew, providing him with an adequate staff of assistants. Mr. Goldring, who visited India at intervals and spent many months in the country, has carried out much valuable work to the entire satisfaction of His Highness.

### DISCUSSION OF MR. CHISHOLM'S PAPER.

Mr. ALEX. GRAHAM, F.S.A., *Vice-President*, in the Chair.

MR. R. PHENÉ SPIERS [F.], F.S.A., said that fifteen years ago he had read a Paper before the Institute giving an account of Major Mant's works and describing his career. Major Mant was a Fellow of the Institute, and, he thought, the first engineer who had occupied that position. The general plans for the palace were commenced in India, but Major Mant brought them to England to work out and complete. Unfortunately, owing to speculation or some other cause, he lost his head, and the last month of his life he (Mr. Spiers) was engaged a good deal in going through the plans with him, and trying to assure him that certain risks he contemplated in the carrying out of the building were only illusory. He suggested that Major Mant should engage the services of a competent surveyor to calculate the exact weights. After his death, letters which came from India proved that before he left that country he had made all necessary calculations; he had found out that in certain cases they were defective, and had really provided extra foundations, so that his fears were purely imaginary. There may have been in the case of the central tower some additional foundation required, and the way the difficulty had been met by Mr. Chisholm in changing the design was an advantage. Nothing had given him (the speaker) more pleasure than to hear that this magnificent work had been carried out, so far as the exterior was concerned, in its entirety. Mr. Chisholm had shown the spirit of the true artist by recognising what there was of value in Major Mant's work, and in doing his best to maintain it, and he had further given his predecessor full credit in his Paper. He quite agreed with the author in the matter of the verandahs. Although he had something to do with the calculations, he really did not know which way the building faced, but he could quite understand that as it ran now it had great disadvantages. This led him to the point of the great difficulty he thought Indian architects had in designing their buildings to provide these verandahs. His hearers might, perhaps, wonder what he (the speaker) had to do with them, because he had never carried out anything

in India; but it so happened that for many years the Government had sent over engineers to England, and he had the duty of educating them in architectural design. His desire, as far as possible, had been to give them, first, a general training, and then lead them gradually up to the study of the styles of their own country. He had, therefore, to see how far he could instil into them the proper principles to be observed when working out buildings actually in this style. The great trouble he experienced was to know how to advise them to deal with verandahs. Mr. Chisholm had explained that if a verandah were carried up the whole height it gave the building a fragile appearance; and that if it were set back in terraces it lost in effect, and became more or less like the pyramids of Egypt. The only way he could suggest that there should be some connection between the verandahs and the building at the back was, in the first place, to arrange, if possible, that the upper portion of the structure should always rise above the verandah, which would show that, at all events, there must be a solid wall at the back. Then, secondly, for the verandahs, as it was necessary that these should be carried on light supports, he could only suggest that at various intervals narrow projecting wings, fairly solid in appearance, should be provided, bringing them out to the front, and that the verandahs should be built in between them, and of such height and open construction as to allow the solid walls at the back of the building to be recognised as part of the projecting wings. He did not know whether any works had been carried out on that principle. There was one point on which they should like Mr. Chisholm to enter more into detail, as it was a subject of great interest—viz. how he constructed the central dome without centering. The question had frequently of late occupied the attention of the Institute. Professor Aitchison had read Papers in which he had pointed out the peculiar value of the researches made by M. Choisy in his book, *L'Art de bâtir chez les Byzantins*, which contained a number of expedients by which domes could be erected



without centering. It would be of great interest if Mr. Chisholm would give the principles he adopted for constructing the great dome without centering, and also how they managed to build the numerous ancient dome structures, which, he had no doubt, were all constructed without centering. He had great pleasure in proposing a hearty vote of thanks to Mr. Chisholm for his extremely clear and lucid Paper, for the valuable plans he had brought to illustrate it, and also for the very interesting specimens of carved work. What struck him more than anything else when Major Mant was at work was the extraordinary beauty of some of the details and their variety. Major Mant had told him it was done by the plasterer on the spot; that it was only necessary to give him the general idea of the scheme, and the workman would carry it out for himself on the plaster. Consequently, every fact differed, every part differed, and every ornament varied from the rest. As regarded the origin of some of the ornament, there was no doubt that the influence of the Byzantine work from the North had crept down. It would be of the greatest value to India in the future if they knew how to turn to account the resources of their local talent, and in that respect it seemed that Mr. Chisholm had done admirably in getting all the assistance he could from the vernacular and traditional work of the country.

GENERAL ST. CLAIR WILKINS, R.E., in seconding the vote of thanks, said he had always admired Mr. Chisholm's designs which he had seen in India, and the description given of the Baroda Palace was most interesting. Major Mant, with whom he had been well acquainted, had asked him (the speaker) to criticise the plans after five minutes' inspection one day. He replied that it was rather a large subject, and the only thing he could suggest was that the tower was not calculated to stand. This remark led Major Mant to investigate thoroughly the subject of the foundations and strength of his tower, and Mr. Chisholm's conclusions in this respect were, no doubt, sound. Mr. Chisholm's position in being called in to complete this palace was a very pleasant one indeed for him. He could not imagine anything nicer than to have another man's plans before one, with perfect liberty to alter them as one liked, and with a very large treasury to draw upon. He gathered from Mr. Chisholm's Paper that the building was faced with sandstone, and of course the expense was very great; it could not fail to be expensive on account of the immense amount of ornament distributed over it. The ancient buildings in India in the Hindoo Saracenic style were chiefly in stone. In those days there were no estimates, and therefore they were enabled to gratify their tastes in producing the most wonderful structures to be seen in any part of the world. Mr. Chisholm had done very well indeed in the alterations he had

made, and had certainly done full justice to Major Mant, whom, he might say, he represented on that occasion, having been connected with him for many years in India. The Hindoo-Saracenic style was one extremely difficult for architects of the present day to indulge in on account of the enormous expense; in fact, the natives themselves frequently gave a stucco facing to their buildings. He did not know how the dome was constructed by Mr. Chisholm, but he was very well acquainted with domes in India. With regard to the dome of the Gol Gumbaz at Bijapur, it was of most wonderful construction—of a kind, he believed, not to be met with anywhere else in the world. It covered a square area of nearly nineteen thousand feet, and there were no intermediate supports and no buttresses outside. The dome was nearly semi-circular, built of brick, and ten feet thick, the weight being hung inside. [The speaker explained the construction of the dome by diagrams chalked on the blackboard. A full description of the dome, with illustrations, will be found in a Paper by James Fergusson, "The Great Dome of Beejapore," read before the Institute 27th November 1854.] The dome was built about 250 years ago, and he believed it was constructed on solid centerings, which were picked out afterwards. Of course, this represented an enormous mass of material, and to repair the dome would be a very large undertaking. Curiously enough, the dome had great cracks in it: the cracks appeared like the lobes of an orange, vertical all round, but it was still sound in other respects. Major Mant had built a very solid structure for the Raja of Kholapur in the Indian Saracenic style, but its cost was too high for a general adoption of the style. The improvement Mr. Chisholm had made in the design was very great, and he was sure that the friends of Major Mant would have been very pleased to have heard the Paper.

MR. F. SILLIS [J.] said that when in Calcutta he had been well acquainted with Major Mant, both privately and officially, and he had been very much interested in the Paper. The verandah was a source of difficulty in nearly all the public buildings he had had anything to do with in India. With regard to the Madras plaster, the columns in the Viceroy's palace in Calcutta were done in that way, and appeared as if they were marble. He would like to add as to painting that the workmen used a piece of rag; and though one might tell them to use paint-brushes, the moment one's back was turned, the paint-brushes were put down and the rag brought out again.

PROFESSOR AITCHISON [F.], A.R.A., in reference to the remarks on painting, said he fancied that the chances of artistic work were 100 to 1 in favour of the Indian painters as compared with any who came from England. He had not the least doubt that the native who put on his colour

with a rag produced a much better effect than the most skilful English workman could with a brush, for it would vary in tone like a piece of Nature's work instead of being flat. The natives of India had always been famous for their mastery of colour, and from India the world had probably learnt its lessons in colour. It was supposed that the Venetian colourists owed their knowledge and taste for colour to their intercourse with the East, and to the lovely fabrics that were made there. He had noticed that buckles and clasps, and women's jewels, made for natives themselves, were generally very fine; but anything done for the English market was of the vilest and most abominable description. The jewellery designed there for the English was in the most execrable taste; the twopenny twist of the baker's shop was, generally speaking, the Englishman's ideal of perfection, and if made in the Punjab was damascened with patterns tastefully designed and beautifully executed. The native pottery—in fact, anything the Indian touched—was most beautiful, having points peculiar to Oriental art. As far as the construction of the domes was concerned, it would be interesting to hear from Mr. Chisholm some account of those he had seen built by the natives. He had heard from travellers that many of the domes in Persia were built by rule of thumb on mounds of earth; if the dome fell, and any one was killed, the architect went away into a neighbouring province; but if it stood, he expected to be adequately rewarded for his work. M. Choisy had shown in his book, *The Art of Building among the Byzantines*,\* the methods hit upon by which centering could be done away with; and no doubt such methods were still employed in the East. When Mr. Chisholm spoke of 2½ tons being put on a foundation the speaker did not quite catch whether he meant that was on the soil or on the footing. Very much, of course, depended on that. Again, as to style they must go to India, Burma, or Siam, to learn a living style of architecture. The English had none of their own. The most brilliant of English architects who went out to those countries were immediately captured by the native styles. There they had a living style, whereas at home there was little but a dead one, though this was being cured. He hoped that the young architects would endeavour to follow those studies which would enable them to mould their art on what had gone before, and turn the ordinary shapes required for construction into beauty—a beauty that would be appreciated by their own people in their own time. With regard to the great hall, he would suggest as a possibility that the idea of Durbar Halls was

taken from the great Throne-rooms of the Imperial Palaces of Rome. The Indians visiting the Courts of the Roman Emperors, and seeing how the great men in the Western world were received, conceived that the same thing might very happily be used in their own country. With regard to the verandah, there was one building in Europe where, one might say, the whole of the interior of the building was a verandah, and that was the Alhambra. Although the heat there was not comparable to the heat of India, still it was hot. Round all the Courts there were cloisters on slender marble columns and arches, on which a lattice-work of tiles was erected, and then plastered into those curious arabesque forms that they had all admired and wondered at. There the object evidently was to get a thorough current of air through the place. He was not so sure, as some appeared to be, as to the variety that the Indian plasterer would give to different patterns. A water-colour artist went to India shortly after the Mutiny. Being in the Punjab, he happened to take refuge during a rain-storm in a building whose ceiling was newly plastered. While he was there a man came in with two or three laths. In the building was an old tub. The native got on the tub, and measured with a lath across the length and width of the ceiling, and put certain points in it. He then began to carve, with a broken end of lath, a most elaborate pattern. This artist was perfectly astounded at the excellence with which the native worked straight off. He stayed the whole day while the native finished the ceiling. The artist had an interpreter with him, to whom he said, "This is one of the cleverest men I have ever seen in my life." The interpreter said, "Oh, no; he is rather a fool." The artist replied, "Well, I don't know what you may call him, but I know I have been thirty or forty years doing work, and yet I could not sit down and do an elaborate thing like that without considering it beforehand and making several alterations." "Well," said the interpreter, "this man's father had three sons, and he himself could do eight patterns. The eldest son could do five patterns, the next son could do four, but this chap, the stupidest of the family, can only do two." His whole skill consisted in being able to work those two patterns that he had learned traditionally from his father.

MR. THOMAS BLASHILL [F.] said he only knew Indian architecture by drawings, and therefore he was not in a position to say anything about it; but, looking at such modern work as he had seen, it seemed to him to be losing, to a certain extent, that agreeable character which the old Indian architecture possessed. He had been much interested in what Mr. Chisholm had said about the verandahs. Instead of looking on the verandah as a temporary expedient, was it not possible to make more of it, and construct the buildings

\* A publisher observed that to publish English translations of M. Choisy's works on *The Art of Building among the Romans and Byzantines* would be a financial disaster, as so few English architects read anything that could not be at once turned to practical use.—G. A.



almost wholly, as regarded their external appearance, of the verandah? He did not think that architects should be afraid of people imagining that a building had no solid walls, because every one who knew anything about it knew that there must be a sort of wall at the back of it. He was always interested in seeing the woodwork of India. There might be an objection that in some parts of the country it would be liable to the attack of insects, although Mr. Chisholm had not said so. It must be liable, also, more or less, to the danger of fire. But the woodwork of India was most interesting; and so was the stonework, which in the matter of ornament imitated woodwork to a large extent. It was a pity that that class of design and construction was not more studied—not only for India, but for England also. Some remarkable specimens of Indian construction were to be seen at the Indian Museum, South Kensington. The wooden ceilings at the entrance to the museum displayed a beauty of design, a skill of workmanship, and altogether a satisfactory arrangement which they very seldom saw in any highly ornamental material in England. A good deal of work of that kind was also to be seen at the Indian Exhibition at Earl's Court. Mr. Chisholm had favoured them with Papers before, and he (the speaker) felt highly gratified in again hearing him in reference to his Indian work. With regard to the plan, he should have been glad if Mr. Chisholm had gone a little more into detail as to what the particular rooms were, and given them some idea as to the habits of the inmates and the domestic and family arrangements. The more he could have told them of these things the more they would have been interested. The plan seemed to be a very rational one. The part where the public only were admitted appeared something like the *atrium* of a Roman house. The Maharaja's apartments, and the distinct house for the Zenana, looked exceedingly well upon the plan.

THE CHAIRMAN observed that Mr. Chisholm had commenced his Paper by a kind of half-apology for introducing a subject which was not European. They could assure Mr. Chisholm, however, that their sympathies were not only with his good work, but with every architecture under the sun—not only that which had been, but also that which they hoped would be. Few architects were fortunate enough to get clients who would give them palaces to build. But architects were creatures of imagination; they lived, as it were, in marble palaces. They did not get them to build, but they had them in their imagination, which perhaps sweetened and softened the worries of daily life. There were many interesting points in Mr. Chisholm's Paper, and one alluded to more than once, in which they had all a common interest—he referred to the adaptation of a verandah for domestic purposes. The verandah

was largely used in India and in all Eastern countries, but he could not help thinking that it was not used to the extent it might be in England. It was true the climate of England was a variable one. But, at the same time, there were many months in the year when one could enjoy a semi-outdoor life, and if architects would pay more attention to the use of the verandah he thought it would be advantageous. He did not mean a verandah three or four feet wide, but a verandah of some width. It was virtually a room, which could be added at little expense. Another interesting matter was Mr. Chisholm's allusion to the work of Colonel Jacob at Jeypore, and that of Mr. Harris at Gwalior. Students in England had had their attention constantly drawn to the admirable textbook published under the superintendence of Colonel Jacob. Those responsible for that excellent work might congratulate themselves that their labour was appreciated, and that great good had resulted from it.

Mr. R. F. CHISHOLM [F.], in reply, observed that with regard to what Mr. Spiers had said about bringing the roof of the main building above the verandahs, so as to give the idea of a solid building behind, he did not think the expedient altogether answered in practice. It had been actually carried out in one or two buildings, and an observer experienced the feeling that a cage, so to speak, had been dropped over the building—a cage of verandahs. One desired to remove the cage and see the building behind more fully. At least those were the feelings he personally experienced. What, unfortunately, added emphasis was the treatment of the dormers, which were not always in keeping with the treatment of the verandahs, the want of harmony adding to the cage-like appearance. He thought the solid building might be brought forward, and over the light verandahs it would secure a more dignified appearance. This was done with good effect in the Doge's Palace in Venice, securing solidity above lightness—weight above lightness he believed Mr. Ruskin called it. With regard to domes, he had read a Paper at the Institute\* on domical construction, and he did not think it necessary to go over that ground again. He might explain briefly that the lower part of the College dome was turned, exactly as General St. Clair Wilkins had demonstrated on the blackboard, by intersecting squares. Centres were made use of for the inner angles only, but none for the other pendentives. In the Paper referred to, he explained that he had adopted in a kind of way Wren's principle carried out in St. Paul's. Wren seemed to see at a glance that a cone tied properly at the foot was a perfectly stable structure. He constructed his cone, and rested the dome on it,

\* "New College for the Gaekwar of Baroda, with Notes "on Style and Domical Construction in India" [TRANS-ACTIONS 1882-83. p. 141].

supporting it by a series of timbers between the cone of brickwork and the dome outside. That, he believed, was the true way to construct a dome, although exception might be taken to the use of timber. In the dome he constructed at the College at Baroda, he built a cone of low curvature and then turned the true dome outside that. On the plan were sixteen cross walls, between the two domes uniting them. That dome was tied in at the base by two courses of stone-breaking bond. The stones being dowelled and cramped together, as long as that ring tied the base the dome was stable. He might mention that it measured about seventy-five feet across, and the thickness of each ring of brickwork was only fifteen inches. It looked a little dreadful when one looked down during the construction, but it stood all right. [PROFESSOR AITCHISON asked how, when the sloping point was reached, the bricks were prevented falling off the inside.] There was nothing to prevent them from falling but the adhesion of the mortar. Rub each brick well in the mortar, and it would hold. Indeed, no cement was used, only common mortar. Where, as in the palace, he had stone to deal with, the problem was simple, because each course could be cramped and become a complete ring in itself. He adopted the same principle of employing sixteen lobes of walls in this case without the inner dome, which, in stonework, he thought unnecessary, and on these he turned the dome visible outside. It mattered not what form the external dome was, provided the lobes were sufficient and tied at the base. [MR. SPIERS inquired how the stones were put up, as they wanted something to support them temporarily.] They were hoisted from the inside, and put on ring by ring, both dowelled and cramped. With regard to the manner in which domes were constructed formerly, he was under the impression that they were built without centres. He thought this because he had found in ruined stone domes complete rings with dowels and cramps, showing that the builders thoroughly understood the value of the tied ring: as each ring closed it became stable, the eye growing smaller and smaller until it was eventually closed. He thought also that brickwork domes were worked without a centre. At Golconda were several domes: the oldest were graceful externally and internally. But in two comparatively modern domes, built about seventy or eighty years ago, the inside domes went up in a feeble way, the curves turned in until they came to a point where the builders apparently hesitated to go further; so they solved the difficulty by putting timbers across and erecting trusses which they had left there, being afraid, apparently, to remove them. There were no lights or apertures. From the above facts he was under the impression that the older builders understood the method of turning domes without centres. The new builders, on the other hand, working on tradition, also without a centre,

corbelled over feebly on the inside, keeping the outer form of the curvature right, but hesitating with the inside until fear of the material falling in deterred them from going further. The size of these domes was between 40 and 50 feet. He did not think any one had actually measured them. The stability of the large dome which General St. Clair Wilkins had alluded to was due solely, he thought, to the thickness. It was such an enormous thickness that the lines of pressure came well within the intrados. [MR. SPIERS asked if there was any reason to suppose that the bulbous nature of the dome was due also to the desire to hang weight outside.] He had thought of that point himself, but there was nothing to prove that the bulbous form had so originated. It was a mistake to imagine that the dome came into India through Persia. With regard to the pressure on the foundations, a very elaborate series of experiments had been made in Calcutta. As many of the public buildings of that city showed weakness of foundations, experiments were carried out, and these showed conclusively that it was not safe to put greater pressure than a ton and a quarter on alluvial earth, and that anything over a ton and a quarter was nearly certain to settle. In fact, it would seem to be better if it could possibly be so arranged not to exceed a ton per superficial foot of actual area at the base of the concrete. The soil was alluvial and very treacherous. The danger did not lie near the surface of the earth, but deep down, some fifty or sixty feet below the foundations. A very dry season would cause the earth to shrink; a wet season succeeded, and the earth raised its back up again, swollen from the water. No doubt it would have been much better if the Baroda Palace had been founded on wells. Piles were not much used in India. With regard to wood being attacked by insects, no teakwood was ever so attacked. It lasted sound for very many years. In the matter of Indian ornament, it was astonishing what an immense amount of capital the Eastern ornamentist would make out of one form. The variety at first sight seemed to be very great, but when dissected one or two parent forms produced the whole. That was not recognised at first, because the forms were so elaborately involved. One parent form, for instance, was a battlement upside down, and it was remarkable what that form ran to.

\* \* \* The exhibits referred to in the Paper included—Elevations of the palace as designed, and of the same as finished; photographs of the interior and exterior; a general view and sketch-plans of the old Palace of Dattia; an oil sketch of the interior of the Durbar Hall, and three etchings of the interior; a selection of the actual working drawings, and of casts from which the ornament was made; and plans of the basement, first floor, and second floor.





9, CONDUIT STREET, LONDON, W., 21st May 1896.

## CHRONICLE.

### THE HOLBORN-STRAND IMPROVEMENT.

**Scheme suggested by the Art Standing Committee.**

In compliance with the requisition of the Business Meeting of the 4th inst., the Report of the Art Standing Committee upon their alternative scheme for the new thoroughfare between Holborn and the Strand, together with the illustrative Plan, as submitted for the consideration of the London County Council, is here given :—

9, Conduit Street, W. : 15th January 1896.

*To the Improvements Committee of the Council of the Administrative County of London,*

HOLBORN TO THE STRAND IMPROVEMENT.

GENTLEMEN,—In view of the great architectural importance of this improvement, the Council of the Royal Institute of British Architects have carefully considered the proposals that have been made to you with respect to the proposed new thoroughfare between Holborn and the Strand, as set forth in your report to your Council of the 25th September 1895, and published in the Minutes of your Council, and have authorised us to submit for your consideration the following report.

As the Art Standing Committee of the Royal Institute of British Architects, we desire to convey to you our gratification with the evident consideration that the scheme has received from an architectural point of view, and for your expressed desire to retain the church of St. Mary-le-Strand.

We entirely concur in your choice of Plan A from those submitted for your consideration, but we are anxious to draw your attention to the following points :—

(1) *Width of Street.*—The proposed reduction in the width of the street to 90 feet is to be regretted, and we would venture to urge that at least the width of 100 feet originally contemplated be restored, though 120 feet would be preferable.

(2) *Architectural Termination.*—The very important question of an effective termination to the view southward from Holborn has already had your attention. The two existing buildings avail-

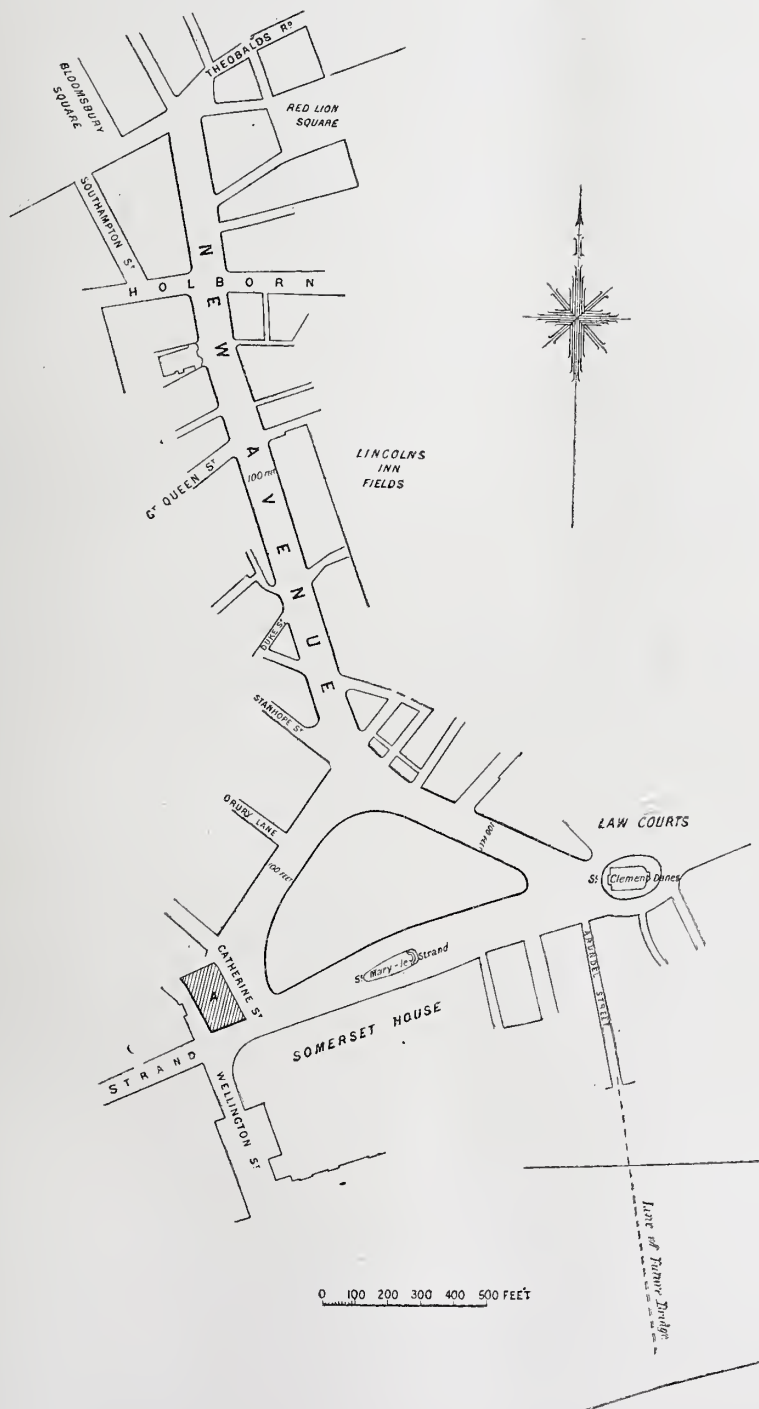
able as architectural terminations are the church of St. Mary-le-Strand and Somerset House. It is very doubtful, however, whether the side view of the church will form the effective termination desired; this church having been designed for its effect when seen from the west, and the plan of the spire being an oblong, its appearance from the north will be thin and unsatisfactory. The spire would not be central with the new street, and, moreover, the church, being below the general level of the new street, will not present a pleasing effect. Somerset House, though open to the same objection as to levels, would present a better architectural termination; but this would so change the position of the new street as to render the western spur awkward and steep, while the main street would acquire a westerly direction which would not be convenient for traffic to and from the City.

(3) *New Bridge across the Thames.*—The report suggests a possible further extension of the street across the river, but it is not indicated whether the suggested bridge is to be in a direct line with the new street or from one of the spur streets. If the former alternative is contemplated, the construction of a new bridge so close to Waterloo Bridge would gravely injure the view of one of the most beautiful bridges London possesses. On the other hand, the contemplated width of the spur streets seems inadequate for the traffic north and south that would follow the construction of a new bridge.

(4) *Traffic.*—It is not clear what traffic is expected in that portion of the new avenue between the Strand and the junction with the two spur streets. The use of this portion of the avenue appears to be limited to persons desiring to visit houses in the Strand between Wellington Street and St. Clement Danes Church. It would seem that traffic from the north desiring to go eastwards will use the eastern spur street, and that going westward the western spur street, while the through north and south traffic will seek for either Waterloo or Blackfriars Bridge by means of one of the spur streets.

(5) *Site for County Hall.*—It is important that if any site be desired for the erection of a county hall for London it should be adequate in size; but, as a matter of fact, neither of the sites referred to in the report can be so regarded. Since the erection of the new Hôtel de Ville at Paris the growth of the municipal work has already rendered it necessary for portions of the Municipal Department to be transferred to barracks across the road, and even now considerable inconvenience is caused from overcrowding.

Having regard, therefore, to the above considerations, we have prepared a Plan which preserves the essential features of the Committee's Plan A, but modifies it in the following particulars :—



THE ART STANDING COMMITTEE'S PLAN FOR THE HOLBORN-STRAND IMPROVEMENT.



(1) The portion of the avenue between the spur streets and the Strand is omitted.

(2) The avenue is restored to 100 feet in width.

(3) The spur streets are each increased to the same width.

(4) The position of any future bridge that might be required is shown opposite the end of the eastern spur street.

(5) The whole of the triangular space between the Strand and the two spur streets would form an adequate site for the county hall, which could then be designed to form an architectural termination to the new avenue, with space for future extension. The county hall would thus occupy one of the most central positions in London, and the architectural effect of this pile of buildings, regarded in concert with the Law Courts, the flanking garden, and the two churches, would form one of the finest street views obtained in London.

In submitting this proposal we would point out that no difficulties as to gradient can arise, and that the cost should not differ materially from Plan A, while the scheme will be of a monumental character, reflecting great credit upon the Council.

We have felt that to do full justice to the occasion the western spur street should terminate in a square, or place, at its junction with the Strand and Wellington Street; but doubtless the great expense involved in this proposal has decided your Committee to abandon its obvious advantages.

We are, yours obediently,

(Signed) ALFRED WATERHOUSE, R.A.,  
*Chairman, Art Standing Committee.*

(Signed) ED. W. MOUNTFORD,  
*Hon. Secretary, Art Standing Committee.*

#### Election of Candidates for Membership.

At the General Meeting of the 18th inst., prior to the announcement of the names of candidates recommended by the Council for election at the Business Meeting of the 8th prox., the Chairman made the following statement:—I have to announce that a number of gentlemen are candidates for Fellowship of the Institute, and that, in accordance with custom, the names would have appeared on the walls this evening as admitted to candidature. But the Council are of opinion that, as a Special Committee is now considering the whole question relating to the candidature and election of Fellows, it is desirable to postpone further proceedings in this matter till the Committee have made their Report. The Council have every reason to believe that the Report will be ready before the Business Meeting to be held on the 8th June.

#### The Meeting and Dinner at Manchester.

The reception held prior to the Annual Dinner yesterday afternoon at the City Art Gallery, Man-

chester, was well attended, many members of the Institute having travelled from London and other parts of the country especially to attend both functions. Mr. Alex. Graham, F.S.A., *Vice-President*, took the Chair, in the absence of the President, Mr. Penrose, who had unfortunately missed his train, and arrived too late to attend the afternoon meeting. Mr. Edward Salomons [*F.*] read a Paper on "The Relations of the Institute to the Allied Societies," and an interesting discussion ensued, in which the following gentlemen took part:—Mr. John Holden [*F.*], President of the Manchester Society; Mr. Thomas Drew [*F.*], R.H.A., President of the Royal Institute of Ireland; Mr. Alfred Culshaw [*F.*]; Mr. George Bradbury, President of the Liverpool Society; Mr. John Slater [*F.*]; Mr. Edwin T. Hall [*F.*]; Mr. Alfred Waterhouse [*F.*], R.A.; Mr. R. Knill Freeman [*F.*]; Mr. Charles Fowler [*F.*]; Mr. W. Goldthorpe, Chairman of the Salford Hundred Quarter Sessions; and Mr. P. Gordon Smith [*F.*]. A cordial vote of thanks to Mr. Salomons and to the Chairman concluded the afternoon's proceedings.

#### The late Arthur Billing [*F.*].

Mr. Arthur Billing, a Fellow of the Institute since 1863, died at his residence at Fulham on the 13th ult. He was born at Reading in 1824, and was the son of Mr. Richard Billing, a surveyor, and sometime Mayor of Reading. He was educated at the Reading Grammar School, and in 1845 came to London and entered the office of Mr. Benj. Ferrey, and afterwards that of Mr. Hardwick. In 1849 he commenced practice on his own account, and took offices in Beaufort Buildings, Strand, afterwards removing to Buckingham Street, Strand. In 1860 he entered into partnership with Mr. A. S. Newman, of Tooley Street, under the title of Newman & Billing. On the death of Mr. Newman in 1873 he was appointed Surveyor to Guy's Hospital, and also Surveyor to the St. Olave's District Board of Works, Southwark. In 1890 he took his eldest son, Mr. A. E. Billing, into partnership, and in 1893 Mr. J. W. Rowley joined the firm, which then took the title of Arthur Billing, Son, & Rowley. Among the numerous works upon which he was engaged may be mentioned several important additions to Guy's Hospital, such as the new large operating theatre, the post-mortem room and dead-house, the coroner's court, and various large class-rooms for the medical school, and houses in St. Thomas' Street for the medical staff, &c. Numerous wharves and warehouses in the City were erected by him, and several churches in various parts of London, among the latter being the Parish Church, Kidmore End; All Saints', Hatcham; Holy Trinity, Penge; St. Peter's, Eltham Road, Lee; St. John's, Chelsea; St. Augustine's, Stepney; and St. Peter's, Fulham. He also erected the Parish Church,

Hammerwich, near Lichfield; and the Meyringen Church (English), Switzerland. He carried out numerous restorations and enlargements in various parts of the kingdom, including St. Dunstan's, Stepney, Middlesex; Dingley, Stanford, Berks; Garvestone, Norfolk; Caversham, Oxon.; St. Magnus', London Bridge; St. Sepulchre's, Holborn; St. Margaret's, Ridge, near St. Albans; St. Michael's, Herne Hill; St. Mary's, Finchley; Seddlescombe, Sussex; St. Lawrence, Reading; Wrotham, Kent; St. Peter-le-Poor, Broad Street, City; and St. John's, Kensal Green. Other of his buildings are the Westbourne Hall and Bayswater Athenæum; the swimming bath for Christ's College, Finchley; and the new Branch Library, Wandsworth Bridge Road.

#### Additions to the Library.

The Institute is indebted to Mr. Harry Sirr [A.] for the following books:—*A Glimpse at the Monumental Architecture and Sculpture of Great Britain from the Earliest Period to the Eighteenth Century*, by Matthew Holbeche Bloxam [80. Lond. 1834]; *Practical Essays on Various Branches of the Fine Arts*, to which is added a Critical Inquiry into the Principles and Practice of the late Sir David Wilkie, by John Burnet, F.R.S. [80. Lond. 1848]; *A Philosophical Inquiry into the Origin of our Ideas of the Sublime and Beautiful*, with an Introductory Discussion concerning Taste, &c. [80. Lond. 1787]; *Criticisms on Art*, by William Hazlitt, with Catalogues of the Principal Picture Galleries of England [80. Lond. 1844]; *Essays on Gothic Architecture*, illustrated with twelve Plates of Ornaments selected from Ancient Buildings, by Rev. T. Warton, Rev. J. Bentham, Captain Grose, and Rev. J. Milner [80. Lond. 1802]; and *An Architectural Tour in Normandy*, with some Remarks on Norman Architecture, by Henry Gally Knight [80. Lond. 1836]. The two last-named works Mr. Sirr has presented to the Loan Library, the others to the Reference Library.

The author, Mr. John Cotton [F.], has presented a pamphlet entitled *Thoughts on Architectural Progress*, being a Paper read at a combined meeting of the Midland Arts Club and the Architectural Association, Birmingham, on the 14th ult. [Birmingham: Cornish Bros.].

The following have been received from their respective Societies:—*Archæologia*, vol. liv.; *Scientific Proceedings*, vol. viii. parts 3 and 4, and *Scientific Transactions*, vol. vi. parts 1, 5–12 of the Royal Dublin Society; *Transactions of the Surveyors' Institution*, vol. xxviii. parts 8–10; *Transactions of the North of England Institute of Mining and Mechanical Engineers*, vol. xiv. part 5, vol. xv. parts 1 and 2, together with part 3 of the Report on Explosives; *Journal of the Sanitary Institute*, vol. xvii. part 1; *Memoirs and Proceedings of the Manchester Literary and Philo-*

sophical Society, 4th series, vol. x. No. 1; *Occasional Papers of the Royal Engineers' Institute*, Chatham, vol. xxi., and *Papers 1 and 2 of vol. i.*; *The A.A. Sketch-book*, 3rd series, vol. i. Nos. 11 and 12; *L'Emulation*, 1895, No. 11, from the Société Centrale d'Architecture de Belgique; and *Bouwkundig Tijdschrift*, vol. xiv. part 1, from the Maatschappij tot Bevordering der Bouwkunst.

## REVIEWS. XLII.

(113)

### A NEW HISTORY OF ARCHITECTURE.

*A History of Architecture for the Student, Craftsman, and Amateur: being a Comparative View of the Historical Styles from the Earliest Period.* By Banister Fletcher, F.R.I.B.A., Professor of Architecture in King's College, London, Fellow of King's College, London; and Banister F. Fletcher, A.R.I.B.A., Instructor in the Architectural Studio, King's College, London, &c. With 115 plates, mostly collotypes, and other illustrations in the text. 80. Lond. 1896. Price 10s. net, post free. [B. T. Batsford, 94, High Holborn.]

The authors explain in their preface that their aim has been "not only to give in clear and brief form the characteristic features of the architecture of each people and country, but also to consider those influences which have contributed to the formation of each special style." The first part of their task they carry out in each case by what they rightly call "brief but . . . vivid notes of the special qualities and characteristics of the building referred to," and for the latter they provide by means of paragraphs under the headings "Geography," "Religion," "Social and Political," "Historical," and the like. In the former department they have succeeded admirably, especially in those parts of their subject where no profundity of analysis is required. The whole of the latter portion of the book, embracing the Renaissance and modern periods, is excellent. The authors have looked at the chief buildings of these later styles in various lands with practised and appreciative eyes, and note in a few pointed sentences their special characteristics and the features in which they resemble or contrast with each other. They seem here to be thoroughly at ease, and they make their readers feel at home in the different architectural centres they visit in their company. The student, craftsman, and amateur, for whom they write, will each feel in his own way grateful for the helpful instruction and pleasant companionship thus afforded to him.

In other parts of the subject, it must be confessed, the treatment seems hardly adequate to the themes. Where there is great historical or constructive interest involved, this easy, gossiping



style is too slight, and a far more searching analysis and greater mental concentration are needed than the authors have cared to apply. For example, the five pages of general introduction to the great subject of Romanesque architecture in Europe are poor, and neither the constructive nor the historical significance of early French Gothic architecture is adequately explained. The authors seem to have made a self-denying ordinance [Preface, p. vii.] to avoid technical descriptions; but this is, one may venture to think, in the present day a mistake. The intelligent general reader who opens an architectural book written by a well known member of the profession looks to have a subject like Gothic construction properly explained to him, and is quite prepared to follow an analysis carefully without voting it dry. As the authors say truly [p. 153], "vaulting is one of the most important features of the period. Its development involved the solution of a group of constructive necessities which influenced very largely the course of the style itself"; yet they do not take pains to put the matter clearly and fully before the reader. When they do give a technical note it is not framed so as to carry information to the non-technical mind. It is useless to tell the layman, without further explanation, that [p. 153] "stellar vaulting converts the ribs, once constructive, into rich decorative patterns, and by its complications leads to a system of forming the trunk of the vaults by ribs of similar curvature. From this the change to conoids is easy, which is the basis of fan-vaulting. In such examples the ribs are mouldings sunk in a solid stone vault, which is a return to the Roman method of vault building. Note that where the conoid ribs are not produced the meeting of the same is effected against a flat lozenge panel." The intelligent amateur needs to be informed what this Roman method was, and how the art of vaulting developed from this into the more complicated and scientific forms of the Mediæval period. The authors, however, seem to take but little interest in the subject, for they state [p. 104] that, in European Romanesque, "in early buildings rib mouldings were used in the vaulting," whereas the significant fact of the period is that in early Romanesque buildings ribs were *not* used, and it was the introduction of ribs, somewhere about 1100, that gave the start to the whole after-development of vaulting.

Again, on the historical side, the class of readers we are considering would require something much more systematic than the scattered notices under the headings already referred to. A few pages explanatory of the position of the Christian bishops in the Romanised West, and of the monks and their life, might with advantage have been prefixed to the whole subject of Mediæval archi-

ture in Europe, and have saved numerous jottings under the head "Religion" in the sections. As it is, we find [p. 133] (after an amazing statement that "by the thirteenth century the greater part of Europe had embraced Christianity") the Orders of monks noticed specially in connection with English architecture, for which there is no apparent reason, while on the other hand no explanation is offered of the really English peculiarity of the monastic character of so many of our cathedral establishments, which is the true ground of the characteristics mentioned on p. 140. The authors seem, indeed, to have the curious idea that the cloister attached to so many English cathedrals was a survival of the early Christian "atrium" [p. 83]. It is really a relic of the monastic system, and its appearance in England and not on the Continent is worth explanation.

It is to be feared that the method in which the book is arranged, though attractive at first sight, is open to serious objection in practice. By splitting the subject up into so many small divisions the opportunity is lost for those general discussions of points of real moment without which a book of this kind seems lacking in due weight and dignity. At all the periods there is a temptation to say something under each of the various headings, though under some of them there may be really nothing of point to bring forward. There are only certain social, political, and religious facts that really bear on architecture, and the same may be said about the facts of geography, climate, and geology. These should be brought out as clearly and fully as possible; but it is inadvisable to fill up valuable space with miscellaneous information without any essential connection with the subjects in hand. The room saved by omissions here might then be used for the well-thought-out demonstrations the want of which reduces so greatly the value of the volume.

After the case of the amateur reader we may take that of the student, for the modern "Craftsman" is a person of such special views that it would be difficult to cater for him aright. Students—by whom we mean primarily those who are working for the Institute Examinations—form an important class among the probable readers of the volume, and it is in their interest that the book is subjected to a somewhat close examination. A book for students should be scientific in its method, and, above all, accurate in statement. If one has to say that the volume under notice too often fails in these respects, it is not from any wish to cavil, but from a feeling of regret that a work marked by so many excellences should be marred by errors which greatly take from its possible usefulness to learners. Many of the errors are merely slips (though they are none the less to be deplored): thus "B.C." is put for "A.D." on pp. 39, 59;

"Kent" for "Hampshire" on p. 60; "vertical" for "horizontal" on p. 301; "lower" for "upper" on p. 95; "Adams" for "Adam," pp. 283, 285. Again, "Adams, Spalatro and Works of the "Brothers Adam" is given as a title of a reference book on p. 284; the Baptistery at Nocera is wrongly called "St. Agnese" on p. 85; the Great Pyramid is stated to have been faced with granite [p. 12], whereas the material was limestone. One may note also that brick was not used at Rome "in bulk for walling" [p. 51], but only, as Professor Middleton has been at pains to show, for facing purposes. It is not the case that the older Doric columns have no entasis [p. 40]. Corinth is exceptional in this, and the entasis in most old examples is specially marked. The Byzantine dome cut from the half orange [p. 98] is only one kind of Byzantine dome. In the example specially referred to, that of St. Sophia, as well as in other important instances, the dome is not part of the same sphere as the pendentives, but rises independently from the summit of these. The Byzantine cap is explained on p. 98 by reference to an illustration which shows two quite distinct shapes, while a different one again seems to be described in the text—for the "deep abacus or "block" is something quite distinct from the normal abacus, as shown in the illustration. The interesting subject of Romanesque caps has scanty justice done to it by the statement on p. 104 that "the capital in early times is of a cubiform shape." The cubiform cap in the West, at any rate, does not come into use till the Middle Ages are far advanced, while forms of the Corinthian and Ionic caps appear earlier, and are equally abundant throughout the style. It is hardly the case that "St. Sophia has been the model for all Byzantine churches up to the present day" [p. 94]. And why should the tomb of Galla Placidia be called Byzantine [p. 94]?

In the case of the Pantheon [p. 57] the authors have taken due account of recent discoveries, but they ignore the fact that the discoveries of Mr. Penrose have proved the Temple of Olympian Zeus at Athens to have been octastyle, and they give its plan on their Plate 18 as decastyle. (The Temple is not Roman [p. 56], but was substantially the work of Antiochus, as Vitruvius makes clear to all readers of his now neglected treatise.) The old traditional date of St. Mark's at Venice, 977-1071, is still retained in spite of recent discoveries. Sundry dates of Greek temples need revision. The time-honoured theory that the early Christians "adapted the ancient basilicas . . . for their own "places of worship" meets us on p. 81; but it is rather too much to read, as proof of this: "How "suitable the Roman basilica was for Christian "worship is easily seen from the plan of the well-preserved example of San Clemente at Rome"—for San Clemente is a building of the eleventh century. Another survival is the theory (a legacy

of Fergusson) that Assyrian architecture was columnar [p. 1]. It seems hardly worth while recommending books of reference like Perrot and Chipiez' *Assyria* if their teaching is ignored in the text. One of the most fundamental facts in the general history of architecture is the development of brick construction in the Mesopotamian valley, with the consequent evolution of the arch and vault, which played a part in the later Greek or Hellenistic world as well as in that of Rome. There is a relic of the old mysticism of pre-Flinders-Petrie days in the statement about the Great Pyramid, that "if the pyramid had been "left at half its height, it would have remained a "national observatory; but as it was closed over, "its object was astrological" [p. 9]. Elsewhere the authors rightly envisage the pyramids as simply royal tombs.

As was said above, the object with which these criticisms have been offered has been to point out how an interesting and valuable book might without much difficulty be substantially improved. There is so obviously a place for an English book on architectural history more compact in size than "Fergusson" that we may expect a second edition of the volume to be before long called for. Some judicious excisions and additions, for which there would then be an opportunity, with careful correction throughout, would make a very different thing of it from what it is at present. The glossary at the end should be improved, or omitted.

Edinburgh.

G. BALDWIN BROWN.

(114)

#### THE RUSKIN MUSEUM, SHEFFIELD.

*The Principles of Art as illustrated by Examples in the Ruskin Museum at Sheffield: with Passages, by permission, from the Writings of John Ruskin. Compiled by William White. Demy 8o. Lond. 1895. Price 10s. 6d. net. [George Allen, 156, Charing Cross Road.]*

It is hard to place this book in any recognised category. Primarily, it is an inflated catalogue, but it has a special character of its own, because the collection with which it deals is a connected one, built up by a single man to illustrate certain principles of Art. As a piece of literary work it is a mere mosaic; the tesserae, which we need not stop to appraise, are Professor Ruskin's; the setting is supplied by Mr. W. White, who may be complimented on the fulfilment of an arduous task. That it was a labour of love is abundantly evident, but one may perhaps be permitted to regret that the writer has not stopped at times to add a dash of bitter to the somewhat honeyed adulation with which master and disciples are alike served up. Everything, we are to understand, is for the best in the best of all possible coteries, and the reader must make haste to join it, if he craves an unalloyed appreciation of these pages.

We have yet a bone to pick with Mr. White, and we should not have looked for the particular



shortcoming in the pupil of so great a master of English prose, but the truth is that the English is decidedly slipshod. What are we to make of this, for instance? "His" [the possessive pronoun refers to Perugino, whose name has not been mentioned for twenty-three lines!] "early" "instruction in Art appears to have been derived" "from a pupil of Benozzo Gozzoli—Fiorenzo di Lorenzo by name—but as he was only a few" "years Pietro's elder, his influence, whatever his" "powers, could have been but slight during the" "short period he was with him, especially as it" "is known that in his younger days, when he" "suffered much poverty and privation, he also" "acted as an assistant to Piero della Francesca, at" "Arezzo." And yet one used to look on Greek choruses as wanting some unravelling! This jewel does not stand by any means alone, nor does the divided infinitive fail to rear its venomous head; but, after all, these blemishes do not affect the book in any way vitally.

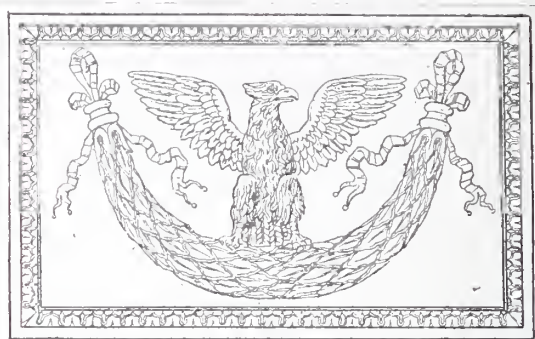
As regards the matter, it does not do to accept everything quite unquestioned: on page 206, for example, the compiler speaks of the subjects of Holbein's "Ambassadors," so called, in the National Gallery, as being still unknown. This ceased to be true several months back—possibly after publication.

Two pages on we are told that it is still questioned whether the Darmstadt or the Dresden "Meyer Madonna" of the same painter is the original, and it is further stated that the latter is regarded by some as a replica by Holbein himself of the earlier picture. Now I believe that all painters have long since agreed, not only that the Darmstadt picture is the original, but that the great painter's touch is conspicuously absent from the latter. The mere amateur may, however, and probably will, continue to prefer the copy.

Yet two pages further on we read: "The tardy" "recognition of Sir Edward Burne-Jones's exceptional art-power by the honour of Baronetcy" "(sic) recently conferred on him is of considerable historic interest." It may be that Sir Edward Burne-Jones is "our only artist," as Professor Ruskin has said. A Celt by race he is at least our most distinctively *English* artist, but to complain that recognition of his work has come late is somewhat absurd. The rare honour—rare among artists at least—of a Baronetcy, coupled with election as an Associate of the Royal Academy under circumstances at once exceptional and flattering, are no mean official recognition, nor so utterly belated, of a worth the appreciation of which among art-lovers has long been raised to the dignity of a cult.

If, then, some of the good things are, as it seems, difficult of digestion, he who picks his sugarplums with discretion and refuses to trust too confidently in specious appearances may yet feast royally.

A. E. STREET.



## AMERICAN EDUCATION.

By PAUL WATERHOUSE [F.], M.A.Oxon.

As a place of residence for high thinkers the universe would be improved by the suppression of facts. Facts are the inconvenient shoals that beset the channel of the theorist's voyage. And, after all, it is for the philosophic navigator to decide whether, if they keep under water, he is bound to recognise every rock that specks his chart. In the interests of easy sailing may you not sometimes ignore even those which grate warningly upon your keel if you can only manage to pass over them on a well-chosen tide?

Perhaps there is no more tempting field for theory than the subject of architectural education, and none in which the facts are more disastrously distributed. In this region these facts take the form known to all of us: of architects successful in all senses—often artistic in the best senses—whose past training and whose present intellectual equipment are together a blasting contradiction of all one's most cherished theories of how to educate an architect, and what he should be when educated. As facts we must ignore these gentlemen, and cling to the higher truths they contravene.

In America they have not given up thinking on the education question. Without, perhaps, going into the wider questions of general culture, they at least take a large and logical view of the nature of technical training. When I say "they" it would perhaps be fairer to say Professor Ware, of Columbia College, New York. He, at least, is no one-eyed specialist, but a sound thinker and an accomplished writer. Thirty years ago he was the pioneer in the States of this educational question, and it was not long before he came to a conclusion that, instead of looking to England for a model in this matter, America would be wise to set up her own standard as a sample to the world. Two pamphlets,\* written some years ago and recently forwarded to our Library, give us a

\* "The Instruction in Architecture at the School of "Mines," by Professor William R. Ware, reprinted from the *School of Mines Quarterly*, November 1888. "The "Study of Architectural History at Columbia College," by the same author, *ibid.*, No. 1, Vol. xvii.

notion of the form which that American standard has taken. These pamphlets merit perusal and study. Once and for all they should silence any outcry against instruction, and even examination, in design; moreover, they make manifest the degree to which a teacher can go in the application of first principles to the historical study of architecture. To many, I am sure, the Professor's statements will come as a revelation and a pregnant suggestion. Any thoughtful reader will recognise in them a system the simplicity of which is as astonishing as its comprehensiveness. I wish here to allude to three only of the methods described and advocated.

Two of them consist respectively of the practice of drawing from description and of the revival of ancient problems upon a modern drawing-board. The third system one could call "mutual instruction" were it not that the phrase has fallen on hard times, so that its significance is mislaid.

The "revived problem" is a device whereby the student not only gets a grip of one of those great riddles the answering of which constitutes architecture, but by the very grappling with the mysteries learns the inward and spiritual elements of those evolutions which a superficial student handles as mere history. Refer to the example given by Professor Ware, and you will see at once how history, for all that it is with architects but a means to an end, can be most profitably and digestibly absorbed by the very reasonable process of allowing the end to forerun the means.

"Design by anticipation" is the rather inapplicable name which Professor Ware has given to the process, and this is his illustration.

Starting as a datum from the comparatively simple construction of the ordinary quadripartite vault, a class of students had set before them the problem "of carrying a vaulted aisle round a "semicircular or polygonal apse." In two hours the variant brains of the class produced on various drawing-boards those five solutions of the problem which the craftsmen of the Middle Ages took two centuries to develop. Thus was a difficult piece of progressive archæology intimately studied and indelibly learnt.

Drawing from description—otherwise called design from dictation—has, one would think, even more fruitful results than those attributed to it by the Professor. That a building, or the features of a building, should be drawn from a verbal description with anything like accuracy is certainly a marvel, but it is as nothing compared with the greater marvel of the description itself. Imagine twelve English architects of to-day endeavouring to describe even so simple a thing as an Ionic capital. It is certain that ten of the dozen would fail. The art of rendering architecture in words has with us been hitherto uncultivated. To cultivate it is obviously to arrive at that logical analysis, that definition which goes hand in hand

with the mere art of attaching names to things. Nomenclature, to be sure, is taught and is demanded in our examinations, but with a certain timidity, for it is branded as a Pharisaic burden bound by the Institute on the backs of young aspirants whose souls should be led to thirst for higher things. "What mortal good," says a caviller, "can it do a lad of twenty to know what "an *apophyge* is; and why should you ask him "for such knowledge?" The rejoinder should be that the youth who can answer half a dozen questions of definition has gone at least a little way into the rational anatomy of his art; if he can go further, and not only draw a piece of architecture but describe it—and for such a description a knowledge of technical language is essential—then he is certainly something more than a mere walker on the surface.

The methods of mutual assistance of which Professor Ware speaks are not altogether unlike systems of which we have had experience in London, but perhaps in America they have been prosecuted with more regularity and completeness. They have been based in some cases upon the foregoing principles of design from dictation and problem solution. The results of the students' labours on a particular subject are exchanged and mutually criticised; or descriptions written by students themselves are worked out by fellow-students, compared with the originals of the descriptions, and in turn subjected to criticism. Again, the possibilities of division of labour have not been overlooked; and when, for instance, it has been thought desirable, for the simultaneous acquisition of a foreign language and of foreign ideas in architecture, to read a foreign book, each student has been allotted a page to work up and construe in class, thus enlarging the span of one lesson's study without unduly stretching each individual's task of preparation.

Probably American architectural education has not been standing still since 1888, the date borne by one of these papers by Professor Ware, and it is very unlikely that its progress since that year has been downhill. It is therefore clear that we may do worse than look to the Americans for an example of rational method in education. Certainly we may miss an opportunity of international courtesy by omitting to thank Professor Ware for his initiation and his exposition of that method.

## NOTES, QUERIES, AND REPLIES.

Saint-Front of Périgueux [p. 409].

From R. PHENÉ SPIERS [F.], F.S.A.—

Professor Baldwin Brown seems to think that I had not given due consideration to the deliberate judgment of Herren Dehio and Bezold when I suggested that the idea of the extension of the domed church of Saint-Front westward "must



"have occurred to them long after they had "visited the building." It was only after a careful examination of their drawings that I came to this conclusion, and it seemed to me to be on the whole the fairest interpretation.

The plan and section which they give of Saint-Front is based, according to their own statement, on the drawings in Gailhabaud and De Verneilh and some measurements. I conclude, therefore, that they measured some portion of its structure as restored, and subsequently, on their return home, worked out their drawings. It is not likely that they could have worked out the drawings on the spot; the plan is too large to admit of that. Besides, it is not the custom with French or German architects to "measure and plot on the "spot," and it has only been done by English architects within the last thirty years, chiefly owing to the strong and continued advice of the late William Burges always to adopt this system. I can quite understand how the idea may have occurred to them when their plans were worked out; and the question remains, Did they return to examine the building in order to see whether their idea was probable or feasible? An examination of their drawings will, I think, prove that they did not; and, as I am virtually challenged to do so, I will give my reasons. In the four central piers the passage runs through in two directions, and is vaulted with a barrel-vault. As the passages are of the same width, and the barrel-vault of both has the same level of springing, the intersections come in two vertical planes, and are suggested in Herren Dehio and Bezold's plan by dotted lines. In the western piers, if there had been any intention of extending the church to the west, the barrel-vault would have run through from east to west, and the cross vault would have intersected on one side only. But in the south-west pier the contrary is the case: the barrel-vault runs from north to south, and the vault from the east side penetrates half through only. It was certainly, therefore, not intended to lengthen the church on the south side. On the north side, for some reason, the passage running from the east is wider than the others, and therefore, it appears, they thought it simpler to let the smaller vault, running from south to north, penetrate it. Neither of these penetrations, however, is shown in Herren Dehio and Bezold's plan, so that either they had failed to notice it, or they thought it safer to leave that on the south side out because it interfered with their proposed extension. I assumed the first interpretation as being the more charitable. There is, however, a third reason. They may have forgotten it, and I should have been willing to give them the benefit of the doubt if in other portions of their drawings I had found that strict observance of actual facts which should entitle the work to the high commendation which Professor

Baldwin Brown gives to it. Confining my attention to the *Aquitainian domes*—the only illustrations which I have had time to analyse carefully—I regret to say that *they are most unreliable*. If there is any characteristic to which an architect attaches more value than to any other, it is in the correct jointing and the shape and size of the voussoirs of an arch; and here in Aquitaine it is of the greatest importance, because the voussoirs are of a more complicated form than is found in any other buildings, perhaps, in the world. Now the arches are not all quite of the same height even in the same dome. Thus, in the central dome the east and west arches have a keystone and thirty-seven voussoirs each side; in the north and south there are only thirty-six voussoirs plus the keystone. What are we to think, however, of the arches in Herren Dehio and Bezold's section, which shows *twenty-one voussoirs only, plus the keystone*? This is not the only error. The voussoirs of the upper part of the arch lean forward—so much so that in section the line of the extrados is parallel with the line of the intrados [see fig. 16]. (M. Lambert pointed out that my drawing No. 15 was in error, as I had made the projection slightly less at the top; and he assured me that in the ancient as well as in the restored building the lines of extrados and intrados were in section parallel.) *Herren Dehio and Bezold have made the keystone vertical*. If, after preparing their drawings, they had paid a second visit to compare them, would they have had the courage to publish them as they have shown? But these are not the only errors. In the jointing of their piers they show only twenty-seven courses; there are thirty-seven in the actual pier, and there were thirty-seven in the original pier before restoration. Similar mistakes occur in the drawings of Solignac, Saint-Etienne, Périgueux, and Cahors—all unrestored buildings; and these I have compared with photographs. I therefore think I was perfectly justified in my assumption that they had not examined the building after their drawings were made and their ideas evolved. Professor Baldwin Brown asks for proof that the west dome was the first built. I remembered that in the course of my conversation with M. Lambert he, speaking of the restoration, remarked that the west dome was the last restored, but the first built. However, to make sure, without informing him of Herren Dehio and Bezold's theory, I put two questions to M. Lambert: (1) Is there any evidence that it was intended to carry the domed church westward? (2) Which was the first dome built? He replied (1) that, both externally and internally, the west end of the domed church was completed as we find it, with no intention to carry it westward. (2) The monk's choir having been burnt down, the first work carried out was the west dome; and this, with its raised floor, was probably used for many years before the remainder

of the church was completed. M. Lambert has been the resident architect in the work for, I think he told me, twenty-seven years, so that it is not worth while going behind his evidence.

### The Flora of Ancient Buildings.

From JOHN HEBB [F].—

Byron, in *Childe Harold* (canto iv. stanza 107), gives a very faithful description of a ruined building overgrown with weeds in wild profusion:—

Cypress and ivy, weed and wall-flower, grown  
Matted and massed together, hillocks heaped  
On what were chambers, arch crushed, column strown  
In fragments, choked-up vaults and frescoes steeped  
In subterranean damp.

Some time ago Cavaliere Giacomo Boni [*Hon. Corr. M.*] proposed to cover the ruins of ancient buildings with a layer of earth sown with *Lippia repens*, *Carex*, and other flowering plants having shallow roots of a texture calculated to protect the walls beneath, and to relieve with a note of fresh and transparent colour the monotonous tone impressed by time on the walls of tufa, travertine, and laterizia of ancient Rome. This was only a first step, an attempt which gave rise to other studies and proposals comprised within the cycle of the general theme—the flora of ancient buildings. In a similar spirit the Theban invoked the ivy to climb slowly, slowly over the tomb of Sophocles, spreading its verdant sprays, as did also the flowers grown on the tomb of Anacreon which inspired Antipater:—

Wind, gentle evergreen, to form a shade  
Around the tomb where Sophocles is laid.  
Sweet ivy, wind thy boughs; and intertwine  
With blushing roses and the clust'ring vine:  
Thus will thy lasting leaves with beauties hung  
Prove grateful emblems of the lays he sung.

Around the ruins of the Appian Way and the Via Latina flourish instead the hateful nettle and the insidious briar, as they did around the sepulchre of Archimedes at Syracuse until indignantly removed by Cicero. The nettle and the briar have supplanted the rose and the violet, the favourite flowers of the Roman Republic, as well as the lily, the flower-de-luce, and the amaranth, which are enumerated by Pliny in their order of flowering.

Cavaliere Boni proposes to add the Etruscan and Greek poppy, the anemone, the crocus, the orchis, the iris, and other wildflowers, such as the fern, broom, asphodel, heath, &c.; to encourage the growth of the dog-rose, ground-ivy, and honeysuckle on the ruins, and to plant upon them dwarf shrubs similar to those we see depicted with great care in the first century in the pictures of Ludius at the Villa Livia.

Myrtle, laurel, oleander, pine, cypress, oleaster, ash, maple, juniper, and crab-apple trees might be planted as far as Frattochie in those places where the Appian is now bare and desolate. The traveller, finding himself sheltered from the heat by

a laurel or a myrtle tree instead of the intrusive and evil-smelling ailanthus, the unclassical gleditchia, or the rusty berberis, would gladly recall the lines of the second eclogue of Virgil:—

Et vos, o lauri, carpani, et te, proxima myrte:  
Sic positæ quoniam suaves miscetis odores.

There can be no reason why roses, lilies, and violets should not be planted about monuments constantly under supervision, such as the so-called Temple of Minerva Medica, the Baths of Caracalla, &c. Without wishing to convert the ruins of ancient buildings into cockney gardens, Cavaliere Boni proposes to replace ugly and noxious growths by beautiful plants beloved by the ancients, such as one might imagine were grown in the green-houses of the houses at Pompeii, the floors of which are now covered with rubbish.

The Italian Minister of Agriculture, Signor Granturco, has received these proposals with favour, and one may heartily hope that Cavaliere Boni will succeed in carrying them into execution, with the co-operation, not only of the residents in Rome, but of the common friends of Roman remains of all nationalities.

## MINUTES. XIV.

At the Fourteenth General Meeting (Ordinary) of the Session, held Monday, 18th May 1896, at 8 p.m., Mr. Alex. Graham, F.S.A., *Vice-President*, in the Chair, with 10 Fellows (including 7 members of the Council), 8 Associates, and several visitors, the Minutes of the Meeting held 4th May 1896 [p. 411] were taken as read and signed as correct.

The Chairman announced that it had been considered desirable to postpone further proceedings in the matter of an intended election of Fellows until the Special Committee now considering the question of such elections had reported [p. 436].

The following candidates for membership, found to be eligible and qualified according to the Charter and By-laws, and admitted by the Council to candidature, were recommended for election, namely:—As ASSOCIATES: James McCurrey Cable, F.S.I. (*Qualified* 1895); George Macfie Poole (*Qualified* 1895) (Sydney, N.S.W.); Arthur Ernest McKewan (*Probationer* 1890, *Student* 1891, *Qualified* 1894) (Birmingham); Herbert Henry Dunn (*Qualified* 1895) (Lincoln); John Ford (*Qualified* 1895) (Devon); James Guthrie Henderson (*Qualified* 1895); James Greenwood Stephenson (*Qualified* 1894). As HON. ASSOCIATES: Arthur Thomas Walmisley, M.Inst.C.E.; Sir Benjamin Baker, K.C.M.G., F.R.S., LL.D., President of the Institution of Civil Engineers; Horatio Walter Lonsdale; T. Raffles Davison; Hay Frederick Donaldson, M.Inst.C.E.; James Andrew Strahan, M.A., LL.B., Barrister-at-Law.

A Paper by Mr. R. F. Chisholm [F], F.M.U., entitled BARODA PALACE: THE TOWN RESIDENCE OF H.H. SIR SYAJI RAO, G.C.S.I., MAHARAJA SAHIB GAEKWAR, was read by the author, and, having been discussed, a Vote of Thanks was passed to him by acclamation.

The proceedings then terminated, and the Meeting separated at 10.15 p.m.

**Erratum.**—A slight error occurred in the report of Mr. Beresford Pite's remarks on the Grant to the Architectural Association at the Annual General Meeting [p. 420]. The



second sentence should read: "The Architectural Association has prepared practically 689 students during the past five years for the Institute Examinations, counting the yearly totals."

## ALLIED SOCIETIES.

### The Sheffield Society.

OFFICERS AND COUNCIL 1896-97.

President, Mr. C. Hadfield [F.]; Vice-President, Mr. R. W. Fowler; Treasurer, Mr. Frederick Fowler; Hon. Secretary, Mr. C. J. Innocent [F.]; Council, Messrs. W. C. Fenton, T. J. Flockton [F.], E. M. Gibbs [F.], W. F. Hemsoll, H. W. Lockwood, J. Smith, and T. Winder, Assoc.M.Inst.C.E.

## LEGAL.

### Public Building.

At the North London Police Court on 10th March the Hackney Board of Guardians were summoned, at the instance of Mr. Frederick Meeson, District Surveyor for East Hackney North, for using Nos. 24 and 25, Sidney Road, Homerton, as a public building—viz. as the married couples' quarters of the workhouse—the District Surveyor not having declared his approval of the construction of the said buildings.

Mr. Jutsum, solicitor, appeared for the District Surveyor; Mr. Ryde, barrister, was for the Guardians; and Mr. Chilvers watched the case for the London County Council.

Mr. Jutsum stated that the Hackney Board of Guardians had occasion to provide quarters for a number of aged married couples. The Board purchased two houses, adjoining the workhouse, in Sidney Road, Homerton. They made certain alterations, and caused the buildings to be occupied. Mr. Meeson served the Guardians with a notice, but the Guardians did nothing, and when Mr. Meeson visited the buildings in February 1896 he found the houses occupied by fourteen persons. The staircases were made of ordinary deal (quite unfit for a public building), the walls were only nine inches thick, and considerably bulged. The sole point which arose was whether the conversion had turned the houses into a public building within sections 78 and 79 of the Act.

Mr. Ryde argued to the contrary, and pointed out that the aged couples might have been lodged out separately. Could it then have been said that each house in which a pauper couple resided was a public building?—Mr. Paul Taylor: I am not dealing with suppositions. In this instance the building adjoins the workhouse, and is really part of it.

The master of the workhouse said that at present there were sixteen paupers and two attendants in the houses. In his opinion the number of inmates, if the houses had remained as ordinary private houses, would have been much greater. The additional buildings were part of the workhouse, and under the rules and regulations of the Local Government Board.

Mr. Alexander Finch, Architect to the Guardians, said that the alterations had been carried out with a view to insuring safety from fire for the inmates.

In the course of further argument Mr. Ryde quoted the case of *Josolyne v. Meeson*, in which it was held that an ambulance station erected in connection with Homerton Fever Hospital was not a public building.

Mr. Paul Taylor observed that the Act, section 5 (27), said that a workhouse was a "public building," and it seemed to him that this building was a wing of the workhouse.

Mr. Ryde said if that was the magistrate's view he should

ask for an adjournment in order that the Guardians might apply to the London County Council to license the building, and thus exempt it from the provisions of the London Building Act. As a matter of fact, the County Council were of opinion that this was not a public building within the meaning of the Act, and they had withheld the license until the magistrate had decided the point.

Mr. Paul Taylor said he felt bound to find in favour of the District Surveyor, and he imposed a penalty of 1s. on each of two summonses which had been taken out.

### The London Building Act 1894.

At the North London Police Court, on 29th April, Messrs. Simpson, builders, of Roding Road, Homerton, were summoned before Mr. Paul Taylor for a contravention of the London Building Act 1894 (Part iii.) in erecting a building at the corner of Roding and Ashenden Roads beyond the building-line as defined by the superintending architect of the London County Council.

The summons was issued by Mr. Frederick Meeson, the District Surveyor, for whom Mr. Jutsum appeared.

Mr. Travers Humphreys, barrister, for the defendants, submitted that the building was carried out under a contract which was entered into before the passing of the Act of 1894.

The contract was produced, and it contained a provision that the buildings should be erected according to the provisions of the then existing Building Act, or any future enactment regulating buildings.

Mr. Jutsum submitted that that provision clearly brought the building under the Act of 1894.

This contention was disputed by the other side, and the magistrate held that the provision in the Act of 1894 (section 212) expressly exempting buildings erected under contracts entered into before the Act came into operation must apply to this case. He therefore dismissed the summons.

In a second case on the same day, before the same magistrate, the owner of No. 75, High Street, Stoke Newington, was summoned at the instance of the London County Council under the Dangerous Structure sections of the London Building Act.

Mr. Jesse Godfrey represented the Council; Mr. Lewis Thomas, barrister, defended.

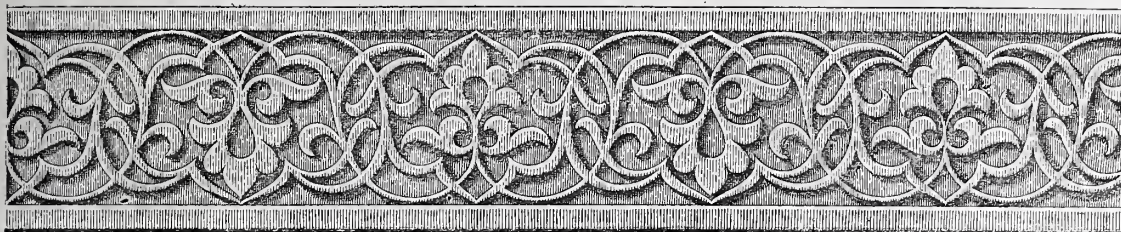
Mr. Godfrey wished to withdraw the summons, as the work required to be done had been done.

Mr. Lewis Thomas asked for costs.

It was then explained that the dangerous structure was an arched cellar under the public footway, the walls of which had been rendered insecure by workmen in the employment of the Stoke Newington Vestry endeavouring to lower the level of the pavement. They had broken into the crown of the cellar, made the place dangerous, and had then served the owner with a notice that the place was dangerous. Finding, however, that they had no power in the matter, the Vestry communicated with the County Council, and this summons was issued simultaneously with a notice that the work would be done, the owner and the Vestry having meanwhile come to a satisfactory settlement. Notice was given to the District Surveyor that the work was in hand on 17th April; but still the summons was proceeded with, and the defendant, nine expert witnesses, and counsel were brought to the Court.

Mr. Godfrey said that he had heard from the District Surveyor only on entering the Court that the work had been done.

The magistrate said he thought that notice should have been sent to the Council by the Surveyor, so that they could have saved the defendant from going to any expense. He should hold that the Council were liable for the omission of their servant, and he should dismiss the summons, with £5. 5s. costs.



BARODA PALACE: THE PRINCIPAL TOWN RESIDENCE OF H.H. SIR SYAJI RAO, G.C.S.I., Maharaja Sahib, Gaekwar.—II. By ROBERT FELLOWES CHISHOLM [*F.*], Fellow of Madras University.

THE five illustrations given with these notes formed part of the exhibits which accompanied my Paper on Lakshmi Vilāsa Palace, Baroda [p. 421 *et seq.*]. The first is produced from a photograph of the western façade before Mr. Goldring had laid out the garden which now surrounds the building. The near view of the Durbar Hall and Porch conveys a fair idea of the effect of the detail, when seen close; it also illustrates, what I conceive to be one of the defects of this particular style, its structural untruthfulness. The forms and adornments of the arches on the left suggest the possibility of the whole being carved from a solid block of stone; in reality, the joints cut the arabesquing anywhere, and when age weathers their angles and the joint lines become prominent, they will claim equal attention with the forms and ornamentation.

My three etchings, which follow, have been transferred to stone, and to this may be ascribed their thin appearance. The bronze statue is one of the many works of Signor Felici. The upper part of the Entrance Hall was originally a room, but the central part of the floor was subsequently removed to add light and interior effect. The third etching represents (I am afraid very inadequately) the luxuriance of the foliage in the courtyards.

In looking over my reply to the points raised in discussion, I am but too conscious that a laudable desire to bring the proceedings to a close caused me to scamper over ground which demanded closer attention, and I deem it a favour on the present occasion to be permitted to answer more fully the various points raised.

First, in regard to domical construction, I do not seem to have made the principles of construction adopted by me, any clearer than when, on a former occasion, I attempted a description of the larger dome of the Baroda College.\* What I venture to claim is, first, a saving of material, and, secondly, a reduction of all cross-strains and thrusts to simple vertical pressure. The first object is secured by making the form of the inner supporting dome correspond roughly to the maximum line of pressure, so that the point of rupture between the apex and base vanishes, and the resultant of all the forces is resolved into vertical pressure and outward thrust at the base, the latter being effectually dealt with and eliminated by the circular base tie; the dome rests on its supports without outward thrust, like an inverted basin on a table. It will be convenient, I think, to leave for the present the question of pendentives, and to consider the dome proper. The simplest and most stable contrivance for covering a circular space is a hollow cone. The walls of a hollow cone with a base as large as the dome at Beejapore might be reduced to the thickness of 24 inches or less, instead of 10 feet. Sir Christopher Wren found every dome of large dimensions in Paris and the other parts of France he visited structurally defective, and so adopted the simple hollow cone. From the inside he suspended

\* "New College for the Gaekwar of Baroda, with Notes on Style and Domical Construction" [TRANSACTIONS 1882-83, p. 141].



the false dome, and on the outside he constructed the true dome. In my humble opinion it is impossible to invent a truer scientific solution to the dome problem. Wren's work has been decried because he did not construct the outer dome of stone, and raised a forest of timber to support a mere line of beauty internally useless. I am unable to sympathise with such ideas. The admixture of different materials in construction can only be wrong, when either corrosion or unequal expansion and contraction become destructive elements. The outer dome of St. Paul's, properly cared for, will in reality last longer than the supporting mass of stone. Would that we could say as much for other celebrated domes! The enormous *weight* of a dome too often meets with scant consideration. It is much easier to dome on solid walls, as at Beejapore, than on connecting-arches and piers, as at St. Paul's. Has any one who thinks slightly of Wren's great work ever taken the trouble to calculate the additional pressure in tons per superficial foot a stone dome would exert on the supports? Again, the charge of wasting internal space for mere external effect might be brought with equal force against every building whose external appearance has excited the admiration of the world. I may instance two such buildings, widely separated in style and geographical position—the Taj at Agra, and our own Salisbury Cathedral.

Returning to the hollow cone, as a most ardent admirer of Wren's scientific ingenuity, I regard his invention as the true key to domical construction. If the hollow cone is divided vertically into, say, thirty-two lobes, each lobe would be supported at the apex, by leaning against its opposite neighbour. When once the cone is complete, provided rings are left at the apex and at the base to preserve continuity, alternate lobes might be removed, or the cone cut into vertical sections without affecting the stability [see fig. 1]. Now, however, each lobe, unsupported by its neighbour, would have a tendency to bend in the centre, by virtue of its own weight, like a beam, to meet which tendency the lobes may be curved to coincide roughly with the maximum line of pressure [fig. 2]. If now the lobes are turned edgeways, and loaded at the point of rupture, the material is arranged in its strongest form, and makes a series of tied raking arches leaning against each other at the apex [fig. 3]; and if these raking arches contain sufficient section to sustain the crushing-force at the apex and the base, thin domical shells may unite them either internally [fig. 4], externally [fig. 5], or both internally and externally [fig. 6].

The fact mentioned by General St. Clair Wilkins, R.E., that the great dome at Beejapore has actually split into lobes and not rings, is extremely interesting, as it shows that where the adhesive power of the material forms an important element of stability, the slight lowering of the crown by settlement, and consequent division of the dome into lobes, does not materially affect the general stability, so long as the maximum line of pressure lies within the mass at the point liable to horizontal rupture. The shoulder-to-shoulder strain, by which stability is secured during construction without a centre, becomes less and less important as the apex is reached. I found experimentally that a hollow cone 16 feet in diameter and 3 inches thick stood perfectly, supporting sixteen cross-walls and an outer dome of the same thickness. I then constructed in actual work two domes on Byzantine pendentives covering a square void of 13 feet in  $4\frac{1}{2}$ -inch brickwork. After this I turned six domes of 9-inch work over voids 30 feet square with Byzantine pendentives, and, lastly, the larger dome of 15-inch brickwork covering a void 60 feet square with Indian pendentives. I may mention here that I designed a brick dome covering a void 130 feet square, but in this the tying-in at the foot presented a new problem. Up to 60 or 70 feet diameter, the tie may be formed by carefully dressed stonework breaking bond, the stones dowelled and cramped together; above these dimensions, the chance of unequal settlement splitting the stones and breaking the continuity of the tie would be extremely great. The only tie of real value would be one of metal. Unfortunately, its

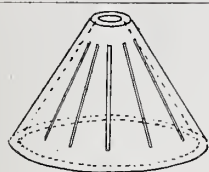


fig 1.

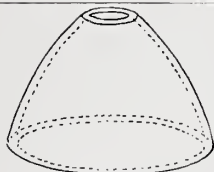


fig 2.

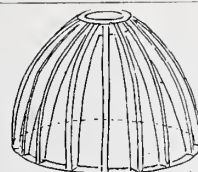


fig 3.

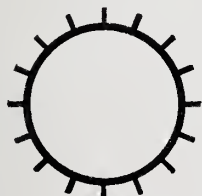


fig 4.



fig 5.

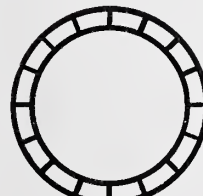


fig 6.

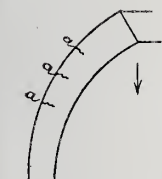


fig 12.

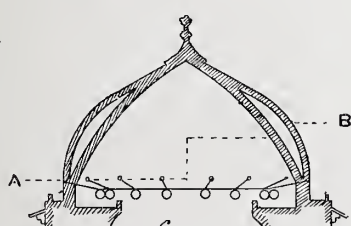


fig 7.

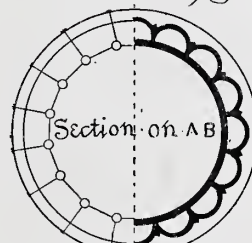


fig 8.

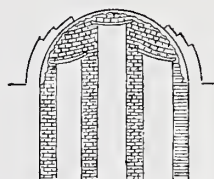


fig 11.

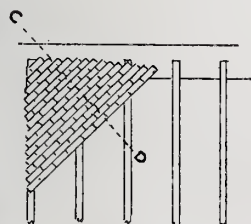


fig 13.

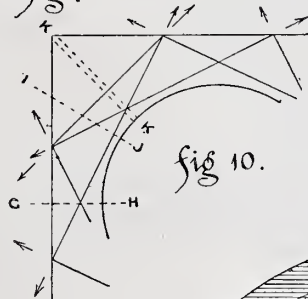


fig 10.

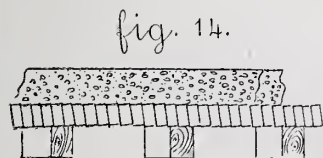
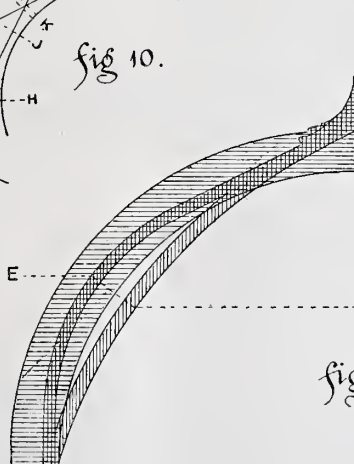


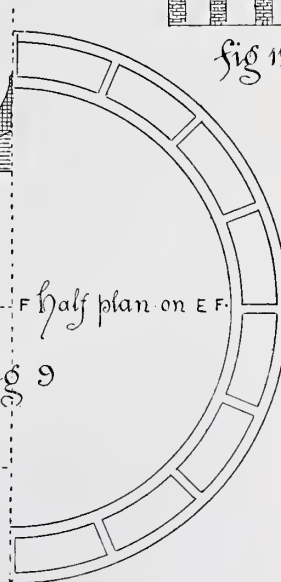
fig. 14.

Section C.D enlarged.



Half Section.

fig 9



F half plan on E.F.



liability to expansion and contraction places it out of the question if applied rigidly. I proposed, therefore, to hold the thrust by sixteen iron ties parallel to the diameters of the circle, linked together on the inside. The points of intersection were to hold leaden weights equal to the calculated thrust of the dome. These bodies would rise and fall with temperature variations, but the horizontal strain would be practically constant [figs. 7 and 8]. The building was not carried out.

The importance of the principles I advocate will be rendered apparent if applied to such a building as the Gol Goomuz.\* I regret I cannot give the exact section of this dome. It is nearly hemispherical in the interior, 10 feet thick at the base, and 9 feet at the top; but from the external appearance I should say that the point of probable rupture is considerably thicker. I have assumed as a minimum an average thickness of 11 feet. This thickness would make the cubical contents about 315,600 cubic feet, and the approximate weight 16,970 tons [see the form hatched horizontally on fig. 9, which represents the half-section of this dome]. A dome constructed according to the half-section and half-plan hatched vertically on the same figure, with the inner dome 3 feet thick and all the rest of the work 2 feet thick, would contain about 114,360 cubic feet, and weigh, approximately, only 6,126 tons.

Touching pendentives—the gathering together or corbelling of the material over the four corners of the square below the dome, to form a circular eye—I think a little too much has been claimed for the Indian system of intersecting arches. Fergusson, in his Paper on the Gol Goomuz at Beejapore, regarded the work below the dome proper as a mass of weight hung *inside* the walls to counteract the thrust—in other words, the four walls, having from the weight of the corbelling a tendency to fall in, counterbalanced the tendency of the dome to thrust them out. In the discussion which followed, it was pointed out that the arches, by virtue of their forms, must exert thrusts against the walls, in the direction of the several arrows shown in fig. 10. Neither assumption appears to be correct. A section across  $g\ h$  or  $i\ j$  [fig. 10] shows the whole mass to be corbelling merely in the *form* of arches on the face, incapable of transmitting arch thrusts unless laterally dislocated from the walls; in reality, the expedient seems to be an ordinary corbelled pendentive with sunk surfaces. On the other hand, the forces at work, being equal and opposite, do actually exert an outward thrust against the walls, not by virtue of the arched forms of the pendentives, but by the continuity of the shoulder-to-shoulder support which sustains the inner mass of material. If, in the first place, the material corbelled out is to act as a counterbalancing weight, it must not be continuous, but cut through at the corners, and left free to fall inwards [see the dotted lines,  $k\ k$ , on fig. 10]. Or, again, if Fergusson's theory were sound, it would follow that the more the material projected inside, the greater would be the tendency for the walls to fall inwards; hence a true dome at the position of the false dome would exert no outward thrust whatever!

With regard to the old domes being constructed without centres, I believe, not only were they so constructed, but the discovery that they could be so constructed led to the adoption of this form to cover large areas. The principles of the truss were quite unknown in the East, and to this day arches of considerable magnitude are turned on centres of brick laid in mud, brought to the correct form in the last-mentioned material [see fig. 11]. Work so constructed would be limited to the quantity which could be finished between two rainy seasons, say at the outside seven or eight months, for any exposed part of a centre such as I have described declines to stand under continued rain. I have myself saved three green arches of 30 feet span by loading the haunches with dry bricks, while the centres sank away. Now the absolute impossibility of constructing such a centre and such a dome as Beejapore in so short a period of time, is to me

\* See Fergusson's *Indian and Eastern Architecture*, p. 564; also his Paper "On the Architectural Splendour of the City of Beejapore" [TRANSACTIONS 1854-55, p. 5].



*C. F. Kell, Photo, S, Furnival Street, Holborn, E.C.*

LAKSHMI VILASA PALACE, BARODA. WEST FACE.







C. R. Kell, Photo, S. Peravel Street, Balloorn, E.C.







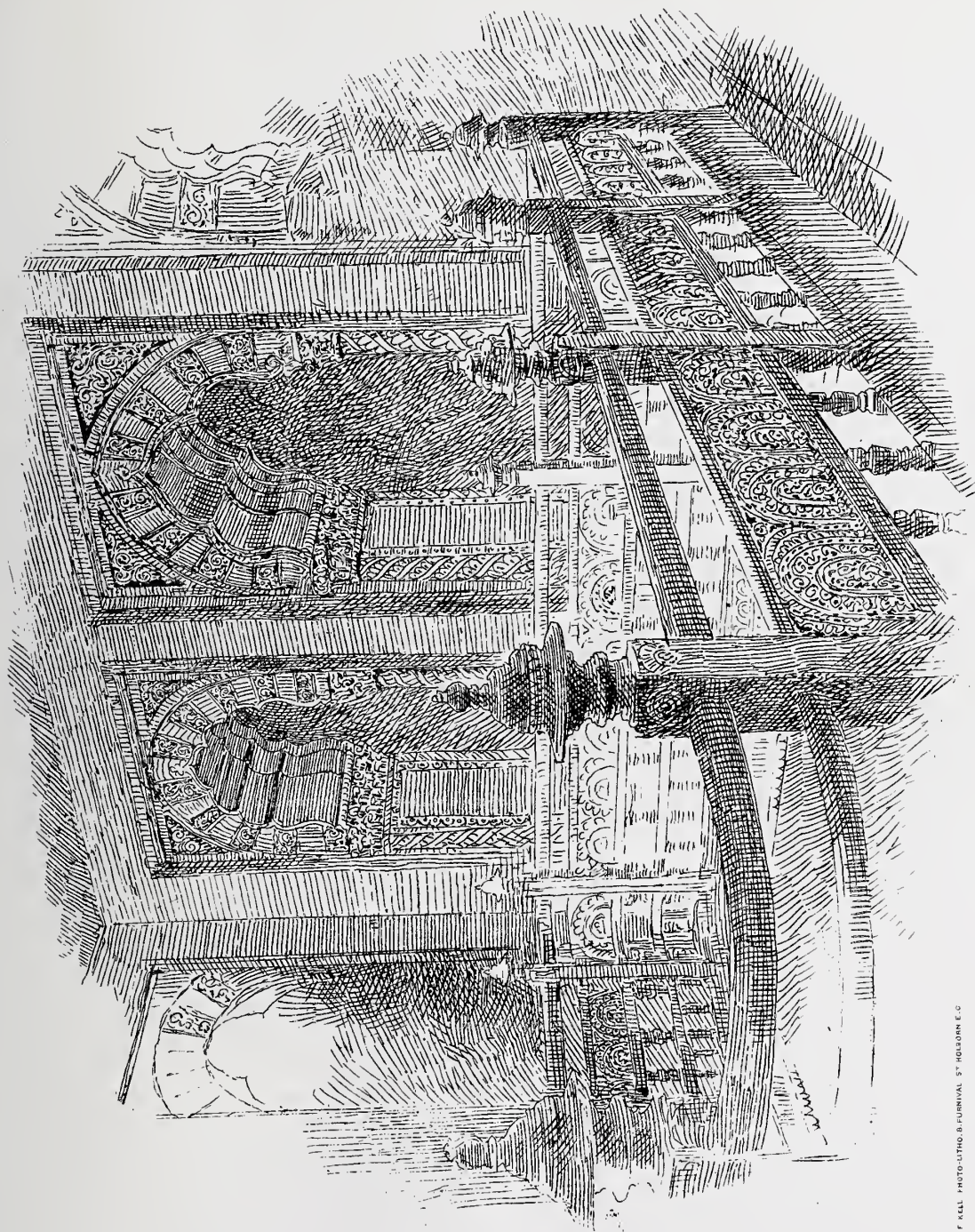
C. F. KELL, PHOTO-LITHO, 6, FURNIVAL ST HOLBORN, E. C.

LAKSHMI VILASA PALACE, BARODA.

BRONZE STATUE. MAIN STAIRCASE.







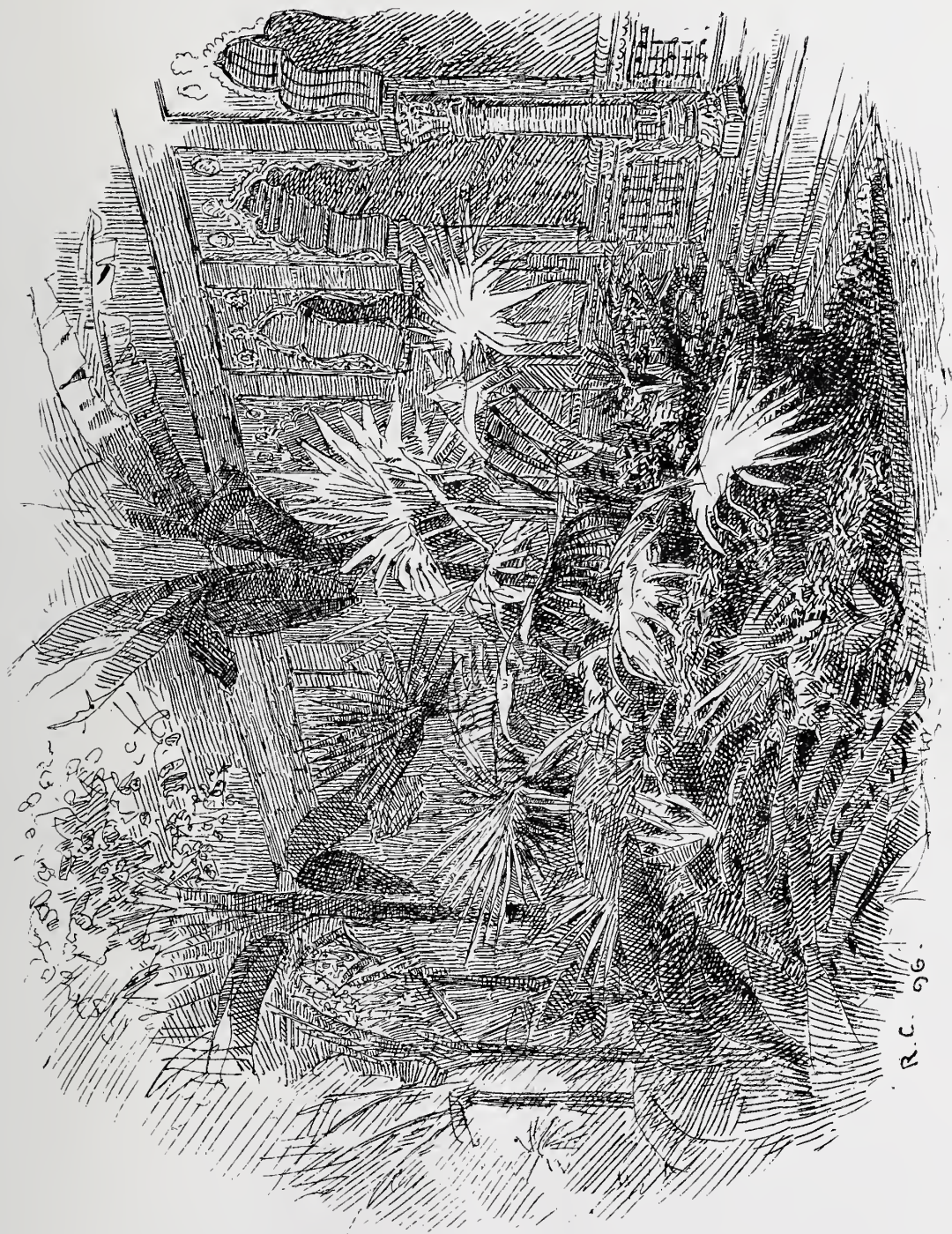
S. F. KELL. PHOTO-LITHO. B. FURNIVAL. ST. JOHNSBURG E.C.

LAKSHMI VILASA PALACE, BARODA.

UPPER PART OF ENTRANCE HALL.







LAKSHMI VILASA PALACE, BARODA.

FOLIAGE IN No 2 COURTYARD.





conclusive proof that no such centering was used. General St. Clair Wilkins has suggested that the whole space to be domed was filled up solid, and afterwards excavated. This method surely intensifies the difficulty, for the liability to unequal settlement would be in direct ratio to the quantity of material employed. Nothing short of good brick laid in mortar would stand continuous heavy rain and a moisture-laden atmosphere; it must be borne in mind, moreover, that a very slight settlement would be fatal to a dome depending on the support of its centering. Doubtless, while the dome was under construction without a centre, cracks occurred on the outside, owing to the slight descent of the inner rings, caused by the giving of the lower joints [fig. 12, *a a*]; but these would again close as the eye became smaller.

At Baroda, both in the College and at the Palace, I used a rough inner scaffold for the masons and bricklayers, very similar to that used at the Duomo in Florence.\* As regards the material slipping off on the inside, it is quite easy with common mortar to make a brick adhere to a vertical wall. In the Madras form of terrace roof joists are laid from 18 inches to 2 feet centre to centre: on these, small bricks,  $8 \times 3 \times 1\frac{1}{4}$  inches, are pressed one against the other, with no support but the adhesive power of the mortar. The men commence at one corner and work diagonally [fig. 13]. In the enlarged section [fig. 14] it will be seen that each brick has a slight tilt. Rain will, of course, destroy a newly made terrace of this description, but under ordinary circumstances thirty or forty hours after completion it can be safely walked on.

With regard to painting, I must sympathise with Mr. Sills's remarks. Shortly after arriving in India, I had to inspect and report on the completion of a public building of some magnitude—a first-class standard Sudder Ameens courthouse—and I remember, among other things, I wrote: "The painting has been completed, that is to say, the doors and windows appear as if dipped like candles in a composition of tallow." I have every reason to remember the remark, as I was subsequently punished for making insubordinate comments. This paint was undoubtedly smeared on with a rag, and left in smudges and blobs. I rather think Professor Aitchison would modify his opinions of Indian workmen and their productions, if he had ever visited the country. As workmen I have found the natives of India excellent, and I would as soon work with them as with the natives of any other country; but Indian artisans' productions generally bear no comparison with the industrial productions of Europe, America, or Japan. When the whole art feeling of a vast continent like India finds artistic expression in industrial works only, it is natural that these works should take the highest place among even the world's industrial masterpieces; but it must not be forgotten that these exquisite works are the production, not of ordinary manufacturers, but individual art masters—men who in Europe would be eminent painters, sculptors, engravers, architects, or decorators; and the deplorable deterioration in the quality of goods manufactured for our markets is due less to the deterioration of the master craftsman's work than to the numerical increase, and consequent admission, of inferior craftsmen, caused by the stimulation of increased demand. While on this subject I would like to again call attention to the remarkable art power of the Jains of Kattiawar. As a body, they are the most artistic people I have ever come across. Among this sect will be found at the present moment the best silk-workers, Kinkob embroiderers, woodcarvers, silver and ivory workers, and damasceeners; and they can proudly boast that their ancestors originated the "petrified poetry" of Jonagurh, Ahmedabad, Agra, and Delhi. Outside this particular sect, however, I am afraid the ordinary native of India will ride to the devil on a paint-pot, or a bottle of aniline dye, as fast as or faster than the natives of any other country.

\* See pl. xli. TRANSACTIONS 1883-84, inscribed "Scaffold-ing used in the Erection of the Dome of Santa Maria "del Fiori, Florence," illustrating Professor Aitchison's

remarks on a Paper by Mr. Wm. Emerson entitled "A "Description of some Buildings recently erected in India," *ibid.* p. 149.



I fear it would be impossible to draw any picture of native domestic life which could guide or assist a designer. In this connection I might mention that the rooms finding the greatest favour are closed on three sides, with the fourth side opening on an uncovered terrace. Such a room with a northern aspect would be perfect. Touching verandahs, although these features form charming breaks in the monotony of an elevation, they are calculated in northern climates to make the rooms they screen, not only gloomy and uncomfortable, but in some positions damp and unwholesome. Where it is possible, however, to light the rooms shaded by a verandah in the space between the roof of the verandah and the ceiling of the rooms, verandahs may be fearlessly adopted anywhere.

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## THE MANCHESTER CONFERENCE: OPENING ADDRESS.

By EDWARD SALOMONS [*F.*].

Read at a General Meeting, Wednesday, 20th May 1896.

Mr. ALEX. GRAHAM, F.S.A., *Vice-President*, in the Chair.

MR. VICE-PRESIDENT AND GENTLEMEN,—

WHEN the Institute took the wise resolution to hold a Dinner in Manchester this year, it was thought by the executive of the Manchester Society that a few words should be said touching the mutual relations between the local affiliated Societies and the parent Body in London. This duty I have been asked to perform, and I now venture to present to you such ideas as have occurred to me on the subject. I would first begin by remarking that, while I believe there must be complete agreement amongst us as to the good which relationship between the metropolitan and provincial Societies tends to produce, there may be differences of opinion, less or greater, as to the methods by which this relationship can best be improved and developed for the general welfare of our profession. One of the most important benefits resulting from the relationship is doubtless the direct consequence of closer and more frequent personal intercourse between the non-Metropolitan Societies and the Royal Institute, whereby we provincials get our views enlarged by the experience of those at the head of the profession, and thus improve the standard of our own work, even if it be not excusable to hope that, on the other hand, the “dons” of the Institute may occasionally be able to gather some few scraps of information from their provincial brethren.

I look upon it that a great deal is to be gained by social intercourse only, and such a gathering as that at which we are now assisting is a very important one from this point of view. It tends to do away with those petty jealousies which surround all professions, more particularly our own, that being one in which personal contact does not often occur, as it does in the case of the legal profession, and, in fact, nearly all others. A busy architect, occupied all day at work either at the drawing-board or on the works, may go on for years without meeting any of his professional brethren. Such was my own case.

When I commenced practice in 1852 our local Society did not exist, and for years I only knew personally one or two architects whom I chanced to meet. There was no opportunity of that exchange of views and experiences with others which would have been to us a mutual benefit. Whatever we did had to be done with such knowledge as each individual possessed; no classes for study, no Papers read that might enlarge our ideas or instruct us; in fact, each individual architect had to work entirely on his own resources. The only means we had of knowing what was going on in the architectural world was through *The Builder*, the only architectural journal published in my early days of pupilage and practice, and I feel grateful to that journal for much that it has taught me of what was going on outside our

small provincial circle. If, then, our profession has gained so much by the founding of one local Society, so much more in proportion is to be gained by uniting all the local bodies of non-Metropolitan architects into one concrete Body under the central control of the Royal Institute—not the autocratic control of an imperial government, but the constitutional sway of a republic extending all over the United Kingdom, its Dependencies and Colonies.

With a bond thus uniting all English-speaking architects—remember, Americans call the English language American—much might be done; and one of the first things to occupy the attention of the whole Body should be the revision of the present miserable system of Competition, by which the public obtain the work of an architect for practically nothing. I may give you an illustration of this in a case (only one of hundreds of similar cases) which took place recently in Manchester, when some fifty sets of drawings were sent in, and, I am told, many good ones. The average cost of these at a very low figure must have been £10 each. The cost of the building will be about £7,000. Thus, to obtain a commission of £350, the profession spent £500, to say nothing of the cost of preparing working drawings. Surely for this great evil some remedy might be devised. To what better use could the unanimity of the profession be devoted than to that of relieving it of the monstrous incubus of competition thus carried on? The Institute has already done good work in this direction; but is it not possible to do more? I am fully alive to the great difficulties with which we have to contend, but let us remember the saying that difficulties are only things to be overcome.

Another matter to which I may draw your attention is one that I think might be fairly considered by the Council of the Institute. In many parts of the country, and I daresay in London also, there are numerous architects who are not members of the Institute, and who are desirous of becoming so, but do not like the idea of having to be voted for by junior members of the profession, some of whom might have been educated, or may have been draughtsmen, in their own offices. Might not power be given the Council in exceptional cases to elect members without requiring them to go through the ordeal of the ballot? Such a system of election prevails in many clubs and other institutions in London, and I cannot but think that if this idea could be carried out in some form an increase of members would result.\*

We all know that throughout the country there is too little appreciation of architecture generally. Very few people seem to understand what the duties and requirements of an architect are. He appears to be looked upon by the vast majority here in Manchester, and doubtless also more or less all over the kingdom, as a superior builder; and it would seem to be thought that one architect is as good as another, irrespective of any ability or extra experience such architect may have had. I would like to draw your attention to the room in which we are now sitting, surrounded by some beautiful architectural drawings. This collection was brought together (somewhat too hastily to get a proper representative exhibition) for the purpose of trying to educate the public to the fact that there is something beyond the mere necessary knowledge of building required from an architect. Even the merit of the drawings alone, irrespective of the buildings they represent, is a matter which I should much like to see the general public appreciate more than they do. It may interest you to know that up to now about twenty thousand persons have visited this Exhibition. Now I do not profess to say that I can offer any suggestions for the carrying out of this idea; but if once mooted amongst the members of the profession, we shall doubtless have many hints and suggestions that will bear fruit in the future.

How would it be if both the parent Body and the affiliated Societies were to combine, and appoint, say, one or two lecturers to disseminate among the public the principles of our

\* See Mr. Penrose's Address at the Opening Meeting of the current Session: "The Class of Fellows: an Appeal and a Suggestion" [pp. 12-14].



art, and show the advantages which would accrue to them by giving it greater encouragement? Do let us do something which will, in some way, move the public to take more interest in our work. Let us try to teach them that they themselves will profit by encouraging art as applied to building, as well as the other branches of art. As an instance of the want of clear conviction on this point, I will mention the case of the Whitworth Institute. With the noble bequest left by the late Sir Joseph Whitworth, a large plot of land was acquired, on which has been erected an exhibition building. Here has been formed a magnificent collection of drawings and paintings, which will doubtless develop into an important exhibition of artistic work; but it is surrounded in Whitworth Park with objects that are anything but artistic. Whether it be in the form of laying out the grounds, or the railings enclosing them, or the shelter and band-stand within them, an utter want of artistic form, or thought, or feeling, is conspicuous therein. The cost might have been a little more, but surely when such a large sum of money is being spent upon pictures, the general surroundings of the building which is to hold them should, above all things, be artistic. The teaching to be deduced from the practice followed in this instance would seem to be that the rooms of a workman's dwelling may be made beautiful merely by having beautiful works of art in them. We know well that this is not so; that the room itself, by little or no more expenditure, can be made beautiful; and this, I think, is of more importance than hanging a beautiful work of art amid ugly and inartistic surroundings.

I will not detain you longer with any more of my erratic thoughts. In the few words I have said I can only hope to have scattered some seed that may possibly bear fruit hereafter. At the present moment the remaining time at our disposal may perhaps be more profitably employed in hearing other opinions and views on the subject. I feel sure that in appreciation of the objects we have in view I shall have your full concurrence, and that I address some who will give us hints at once more numerous and more practicable than those which I have ventured to offer.

#### DISCUSSION OF THE FOREGOING PAPER.

MR. THOMAS DREW [*F.*], R.H.A., President of the Royal Institute of the Architects of Ireland (Dublin), who opened the discussion at the invitation of the Chairman, said that he should confine himself to only one point upon which Mr. Salomons had touched—namely, the question of admission to membership of the Institute. Looking at the matter from a provincial point of view, he considered the real test in bringing the provincial architect into touch with the central Body should be selection or nomination by the local Society. It was not expedient to lay down a hard-and-fast line as to the ultimate ordeal that a candidate should pass, but if his nomination and examination were confined in the first instance to the district in which he lived, that would be the better tribunal to estimate his abilities and merits with a view to recommending him for admission to the Institute.

MR. A. CULSHAW [*F.*] rose at the invitation of the Chairman, but explained that his Presidency of the Liverpool Society had just expired. He, however, had brought with him to the meeting his successor, Mr. Bradbury, who, unfortunately, was not a member of the Institute. That suggested

at once a point of great importance, as their Society was consequently deprived of representation upon the Council of the Institute for the next twelve months. They would say that it was their President's own fault that he was not a member. That might be so; but, after all, the question resolved itself into the benefits derivable from such a membership to those who already belonged to local Societies. He himself, he hoped a very loyal member of the Institute, had experienced considerable difficulty in convincing provincial architects that they should join the Institute also. The question about a revision of the mode of electing Fellows would shortly come on for discussion at the Institute, with, he trusted, the most beneficial results, for he believed the whole subject was of far greater importance to architects in the provinces than those in London realised.

MR. W. GOLDTHORPE, Chairman of the Salford Hundred Quarter Sessions, thought it a good thing that architects should meet together and discuss their grievances and difficulties. These must constantly arise in every profession, and their ventilation would be for the benefit of the whole body of members. They had at the Bar

what was commonly called a trade union, and a very close trade union it was said to be. A few years ago they had established a Committee of the Bar in London, and the discussions on various professional matters brought before that Committee had resulted in very great advantage to members of the Bar. Apart from other questions affecting the architectural profession, that of competitions required to be well thrashed out. It seemed to him that in this matter architects had been working upon a wrong principle for many years. That a number of gentlemen of high standing in their profession should be expected to prepare a large number of drawings for one particular subject, and then have their labour thrown to the winds, had always seemed to him to be radically wrong in principle. Mr. Salomons, he believed, had suggested no solution of the difficulty, but something might be done by discussing the matter.

MR. JOHN HOLDEN [*F.*], President of the Manchester Society, said that it seemed to him that architects must follow all other professions or businesses in one thing. There must be co-operation, or trade unionism, as Mr. Goldthorpe had called it. They must be banded together for their own protection, and for the protection of the public; such union was for the advantage of both parties. The Institute naturally took the first place among architects, not only because of the large number of the London district architects belonging to it, but also from its age, having been established some sixty-two years. It ought therefore to attract and to attach to itself provincial Societies throughout the country. That it had done to a certain extent, and it seemed to him to be the duty of the provincial Societies to further that end, not only for the protection of their own members, but also for the protection of the public. People asked what benefit they would derive by becoming Fellows of the Institute. There was a great deal to be said on that point, and it was a difficult question to answer, because they might to a certain extent obtain through their local Societies many of the advantages offered by the Institute. But that was too narrow a view to take of the case. There was something beyond pounds, shillings, and pence to consider, and he certainly thought that one of the principal duties of a local Society was to act as a feeder to the Institute. It should be the endeavour of all architects to join the parent Body, and if they could only induce every architect in the country to join the Institute, there would be a solution of the difficulty. But that was out of the question. Many would not join; others were not eligible. But still those doing good work for the public ought not to be left in the background and without control. Even the ineligible should not be lost sight of; they must be prevented from doing mischief. One of the things every provincial

Society should do was to make it impossible for their Society to drop out of representation on the Council of the Institute because their President was not a Fellow of the Institute. That very matter had been considered when the alliance clauses were under discussion, and the Manchester Society had guarded against such a possibility by making a rule that every president, vice-president, or honorary secretary must be a member of the Institute. That, he thought, was the basis of the connection between the provincial Societies and the Institute. If a Society elected as President a gentleman who was not a Fellow of the Institute—he might be a very good man; there were no doubt a great many good men outside the Institute—they must take the consequences of not being represented. It was a very great pity the President of the Liverpool Society was not a member of the Institute, and the sooner he took up his Fellowship the better. As to the elections he quite agreed with Mr. Salomons. There were a great many gentlemen outside the Institute who ought to belong to it, but very many did not care to face an election by ballot in which both Fellows and Associates voted. He could quite understand that a gentleman who had been in practice for twenty or thirty years would say, “I would sooner remain as I am than place myself in the position of being voted upon by gentlemen who have passed through my office, and some of whom may be in my office now.” He did not think that mode of election at all necessary. The Council of the Institute were the proper persons to judge of the fitness of candidates. If a gentleman who had been in honourable practice for from fifteen to twenty years could bring forward credentials and proofs of his ability, nothing more was needed. The Council of the Institute were quite competent to judge whether he should be elected a Fellow of the Institute or not; and such powers ought to be given to the Council at once. The elections might be limited to a certain number each year. If the Council had that power he believed that a great many who ought to be members would join. He was glad that the Institute had convened this meeting, and the idea of holding the Annual Dinner occasionally in the provinces was an admirable one. Many provincial members seldom went to London, but they were always wishful to meet their Metropolitan brethren. In social meetings such as this, lifelong acquaintanceships were often formed, and both the Institute and the provincial Societies would benefit by the new movement.

MR. JOHN SLATER [*F.*], B.A. Lond., said that if any one had doubted the wisdom of holding a Meeting of the Institute in a city like Manchester, the present discussion would convince him that it was a very wise move indeed. It was certain that London architects could only obtain good from hearing the views of their provincial brethren on



points which were of interest to them, and which they in London were not perhaps so well able to grasp. The question of the election of Fellows was a point which had much exercised the minds of the Council. When the new Charter was framed they were exceedingly anxious to give the Associates a voice in the management of the Institute, which they had not before possessed; and he was afraid that they had gone a little too far. There had been undoubtedly during the past year or two a sort of cabal—he did not use the word in any invidious sense—raised among the Associates, most of them London men who had passed the Examinations, and who did not like the idea of Fellows being admitted without going through the mill which they themselves had gone through. A little reflection, however, ought to convince them that there was all the difference in the world between electing as a Fellow a man who had perhaps only just qualified for Fellowship, and electing men who had been engaged in honourable practice long before the Examinations were even thought of. He, for one, felt very strongly on the subject, and if there were a possibility of a repetition of what had occurred a year or two ago, when some very admirable and eligible candidates were blackballed, for no fault of their own, by people who, he believed, knew nothing whatever about them, then the Council, he considered, ought to take steps to alter the by-laws and limit the election of Fellows to the Fellows themselves. It was a scandal that well-known and respected gentlemen should have been blackballed through the action of a few. Members who knew nothing whatever about the merits of a candidate would not vote for him because they did not know him; so if a poll were demanded it was easier to keep a man out than to get him in. As to the advantages to be gained by provincial architects in becoming members of the Institute, it was difficult to say how the central Body in London could give greater advantages to provincial members. If the Institute had more funds at its disposal—as it would have if the membership, especially of Fellows, increased—country members might have the advantage of borrowing books from the Library. The Institute had one of the finest collections of architectural books in the world, and the more the loan collection could be increased, the more opportunities would there be of lending books to country members. Expensive books could thus be consulted by members living at a distance from London without any cost to them. Then provincial members received the Institute JOURNAL, and he did not think there could be two opinions as to the immense value of the JOURNAL, which contained, not only the Institute Papers, illustrations, and discussions, but many of the Papers read before the Allied Societies and other matters of interest. Then it must not be lost sight of that the subscriptions to Allied Societies of pro-

vincial members of the Institute were paid by the Institute. The Council, however, would be only too glad to receive suggestions as to the way the advantages of country membership might be increased, and, if they were at all practicable, to act upon them.

MR. EDWIN T. HALL [F.] observed that the idea of holding a Meeting and the Annual Dinner in the provinces was a great and useful departure, and was in furtherance of a policy which was foreshadowed when the new Charter was devised. Such Meetings assisted in the circulation of ideas, and the Meeting that day had been a very valuable one. Mr. Salomons had spoken of the great waste of time and labour entailed by competitions. But could any other course be suggested? That was the crux of the whole question. Were they to select a few leading architects, men who had made their mark, to design all the big buildings in the country? If so, what became of the young men—what had they to say on the subject? On the other hand, was it to be laid down that when once a man had designed a large building he should not design another, and that the younger men should have the chance? He was afraid the senior men would object to that. Competition was as old as the world, and in his opinion competitions must go on more or less as they do at present. Many leading architects of the day had made their reputations through competitions. When a young man by industry and hard work had succeeded in winning a competition, he took a step forward. This, in an artistic profession, was the only way a man could succeed, unless he happened to commence practice with a large connection ready cut-and-dried for him. They all deplored the difficulty, but the fact must be faced that it was almost impossible to suggest another way of getting the desired result. With reference to the election of Fellows, that matter had been engaging the attention of the Council for a considerable time. It was much to be regretted that the President of the Liverpool Society was not a member of the Institute; but with regard to Mr. Culshaw's question, what advantage was it to a man to belong to the Institute, ought it not to be put on the higher ground, How did he further architecture and the practice of the art by joining the Institute? It was to be hoped they had something better to serve than their own personal interests; the well-being of their art, and the interests of the Body at large, should be their first concern. One advantage of joining the Institute was this: if a member of an Allied Society were a member of the Institute, and were elected to be the President of his Society, he would have a powerful voice—for the representative voice of an Allied Society was always listened to with the greatest respect in the Council of the Institute—in directing the policy which guided the Institute, and therefore guided the profession

of architecture, not only throughout Great Britain and Ireland, but throughout the Colonies. Architects should influence the public; and if they wanted the public to take more interest in architecture, some stimulus must be applied. It would have a great effect upon the public if the whole body of architects in the kingdom were united with one object, namely, the advancement of architecture. The public would be much more influenced by such a union than by a number of little Societies, which, for all they knew, might be merely social clubs. The fact of a man belonging to an honourable Body like the Institute was a guarantee to the public that they were in safe hands. It was a guarantee that the architect had a certain degree of competency in his profession; and it would be of advantage to every man who practised architecture if the public knew that he was a member of the Institute. With regard to the mode of election he thoroughly agreed with Mr. Slater. It was a most regrettable circumstance that it should be in the power of junior members to exclude from the Institute men, very much their seniors, who had done good work all over the country. When the power of voting was given to the Associates, it was hoped that they would display a proper public spirit and sense of responsibility in its exercise; that they would use their power not in any way that would tend to limit the number of members, and therefore restrain the influence of the Institute throughout the country. That hope had not been realised, and the result, he thought, would be that the power of voting for Fellows might have to be withdrawn from the Associates unless some change occurred. In many Societies the election of the senior class of members was by the Council alone, and it had been advocated that that should be the case in the Institute. If not, it certainly should be by the Fellows alone, after the applicant had been admitted to candidature by the Council. He could not forecast the result of the deliberations of the Committee now sitting on this very difficult question, but he should not be surprised if it took somewhat that line. If so, he hoped that every gentleman of standing present, if he were not already a member, would make up his mind to at once join the Institute, and would encourage and persuade every practising architect in the country to come forward in the same way. When the Institute was strong in numbers, and all its members were tried and good men, its influence would be greatly strengthened; the country would realise that there was more in architecture than it had been aware of, and the result would be a truer, more intelligent, and more widely diffused appreciation of their art.

MR. G. BRADBURY, President of the Liverpool Society, said he had come to the Meeting with the hope of receiving information as to the objects and aims of the Institute, and he had

gained considerable knowledge, especially from Mr. Hall. He should consider very seriously the question whether he ought to run the gauntlet of the ballot. He had been in practice for twenty-two years, and had been a member of the Liverpool Society for twenty-five years, and the reason he had never applied for admission to the Institute was simply that he did not care to run the risk of being blackballed. He held strong views perhaps on the subject, but he felt that gentlemen who were honoured by being elected Fellows of their own Societies, and who had done good work in those Societies, should be eligible for election as Fellows of the Institute on the recommendation of the Council of the local Societies. Then another point. He had been elected to the office of Diocesan Surveyor. He was the first elected by public advertisement as required by Act of Parliament. He felt that to be a great honour, because all the leading architects of Liverpool were candidates for that office, and he was so fortunate as to be elected by a large majority. He should have felt at such a time that, if his work had entitled him, it would have been an exceedingly graceful act if the Royal Institute, through the Liverpool Society, had invited him to become a Fellow. Perhaps he was a trifle too thin-skinned, but he had always felt that to run the risk of not being elected might very seriously damage the reputation he had gained among his brother architects in Liverpool. That was the sole reason he had never applied for admission. Supposing he were to apply, and supposing some of the Associates who had the voting power, said, "We do not know this man; we never heard of him; let us blackball him." For the President of an influential Society to be blackballed in that manner was a position too serious to be contemplated. With regard to competitions, some one had referred to the Institute as a Body to a certain extent holding views similar to societies formed among the artisan classes—namely, trade unions. That was an admirable line to take, and the Institute should combine as much as possible. Supposing half the architects in the kingdom were members of the Institute, and they resolved not to take part in any competition except among themselves, no corporate Body, in his opinion, would then venture to throw open a competition to the whole of the country by public advertisement in the face of such a resolution by the great representative Body. The result would be that probably fifty per cent. of the remaining architects would be compelled to become members of the Institute.

MR. ALFRED WATERHOUSE [F.], R.A., LL.D. [*President 1888–91, Royal Gold Medallist 1878*], said they were much indebted to Mr. Bradbury for his excellent practical suggestion with regard to competitions. He believed that members of the Institute might very safely agree not to take



part in competitions except among themselves. That was what he understood Mr. Bradbury to suggest, and he thought it an exceedingly graceful suggestion from an outsider, though he hoped Mr. Bradbury would not remain long outside the Institute. His reluctance to seeking admission to the Institute under existing conditions of election was very natural; and the Institute, he thought, must make a radical change in the mode of election of Fellows. His individual opinion was that the election of candidates for Fellowship should be left entirely in the hands of the Council, who should have power to elect a certain number annually. The Council should take the onus of that selection; should make all the necessary inquiries, which should be of the most searching character; and it should be no discredit to any gentleman if by reason of the number of applicants his election was postponed to another year. That, he thought, would dispose of the very legitimate objection raised by Mr. Bradbury with regard to the older members of the profession who hesitated to seek election under the existing arrangements. He should like to say a word in defence of the new Associates. Justice had hardly been done them. The fact that they had passed an examination which their seniors had not passed very naturally gave rise to a feeling that more than ordinary stringency was required in advancing men from the outside world into the class of Fellows; and he was therefore not surprised that some candidates had been blackballed. He agreed that the procedure was very improper which resulted in the rejection of very deserving men; but allowance must be made for the feeling of the younger Associates. He thought it would be a little hard to take from the Associates the privilege which was granted only a few years ago because a few out of a very large number abused that privilege. He should like to add one word as to the reasons which should induce architects to become members of the Institute. It was not merely a question of whether they were to derive individually certain advantages by becoming members of the Institute; but whether by joining the Institute they could advance their art, and the profession to which it was an honour to belong.

Mr. EDWIN T. HALL [*F.*] remarked that, owing probably to the fact that candidates for election were not personally known to members, only a small number of voting-papers were returned. He suggested that members should make it a rule that if they did not know a candidate they should vote in his favour if the candidate were recommended by the Council.

Mr. THOMAS DREW [*F.*], R.H.A., wished to add a word on a matter that affected provincial members, and would cite his own case as an instance in point. As President of the Institute of Ireland he had a seat on the Council of the Institute in London, and it cost him £10 and

three days to exercise the privilege of attending. That, he thought, somewhat discounted an otherwise great honour.

THE CHAIRMAN said that, as the representative of the President and Council of the Institute, he could assure the Meeting that the various matters referred to and suggestions made during the discussion would receive full consideration at the hands of the Council. The question of competitions had been before the Institute for a great number of years. The more important question of the ballot was also now being considered. With regard to the greater benefits that should be derived by provincial members, through alliance with the Institute, he would refer to their magnificent Library, but he was sorry to say it was not used as much as it ought to be. For some time past they had been considering how to make the Library more useful, either by circulating books or in some other form, in order that members of Allied Societies might derive almost the same benefit from it as if they were living in London.

Mr. R. KNILL FREEMAN [*F.*] said that the Council would confer a great boon on provincial students if the privileges of the Library could be in some way extended to them. A Manchester student, preparing for the Institute Examinations, had recently complained to him that he was very much handicapped in the particular subject he was studying, and placed at a disadvantage as compared with London students, because certain books he wanted to consult were not to be found in the Manchester Library. If they could devise a means of facilitating the access of provincial students to the Institute Library, it would be a great point gained in the way of increasing the value of membership of the Institute for provincial members.

Mr. CHARLES FOWLER [*F.*] asked to be allowed, as a London architect, to congratulate Manchester architects on the great success which had attended their recent works. He had had that day an opportunity of renewing his acquaintance with the city, which had been interrupted for six or eight years, and he found that its architecture was extremely creditable. Some of the buildings erected within the last ten years were certainly very striking, and he should be glad to see more such buildings carried out in London.

Mr. E. SALOMONS [*F.*], in reply to the vote of thanks, referring to Mr. Hall's remarks, said he was mistaken in thinking that he (Mr. Salomons) objected to competitions. He simply pointed out the evils of the system, and the necessity of devising a means of getting rid of them. The idea suggested by Mr. Bradbury was a point on which discussion might be raised, and perhaps some practical issue arrived at. He thanked Mr. Fowler for the very kind way in which the work of the Manchester architects had been recognised. Coming from

such an old, experienced member of the profession, they felt it a very great compliment.

### THE DINNER.

The attendance in Manchester of members of the Institute on the occasion of the recent Conference and Dinner, considering the distances to be travelled, was satisfactory, and the interest manifested in the whole proceedings may be taken as a happy augury for future annual gatherings at non-Metropolitan centres. The idea of holding the function occasionally in their own districts is regarded with especial favour by provincial members, as affording them an opportunity of becoming acquainted with their professional brethren throughout the kingdom.

The Dinner at the Queen's Hotel passed off most successfully, and there was more than one lament from the Manchester men that the claims of London members and of the other Allied Societies precluded the possibility of the Institute again assembling for its annual reunion in their city until after the lapse of a considerable interval. Mr. Penrose presided, and was supported on his right by the Vice-Chancellor of the Palatine Chancery Court, the Town Clerk of Manchester, the Principal of Owens College, Mr. Alfred Waterhouse, R.A., and Sir E. Leader Williams; while on his left were the Mayor of Salford, Judge Parry, the Dean of Manchester, Professor Simpson, and Mr. Alex. Graham, F.S.A. The Presidents of the Royal Institute of Ireland and of the Manchester and Liverpool Societies presided respectively at the lower end of each table. With the exception of a few personal friends of members, the following is a list of those present, including the official guests of the Institute:—

Mr. P. E. Barker [A.]; Mr. R. I. Bennett [F.]; Professor Bodington; Mr. G. Bradbury, President of the Liverpool Society; Mr. J. J. Bradshaw [F.]; Mr. John Brooke [A.]; Mr. G. Brown; Mr. J. H. Burton; Mr. J. K. Bythell, Chairman of the Ship Canal Company; Mr. Charles Caine; Mr. A. W. S. Cross [F.], B.A.Cantab.; Mr. A. Culshaw [F.], ex-President of the Liverpool Society; Mr. Alfred Darbyshire [F.], F.S.A.; Mr. A. H. Davies-Colley [A.]; Mr. Thomas Drew [F.], R.H.A., President of the Royal Institute of the Architects of Ireland; Mr. John Eaton [F.]; Mr. John Ely [F.]; Mr. Wm. Emerson [F.], *Hon. Secretary*; Mr. R. Knill Freeman [F.]; Mr. Charles Fowler [F.]; Mr. Edward M. Gibbs [F.], ex-President of the Sheffield Society; Mr. W. Goldthorpe, Chairman of the Salford Hundred Quarter Sessions; Mr. Alex. Graham [F.], F.S.A., *Vice-President*; Mr. Edwin T. Hall [F.]; Mr. Samuel Hall, Q.C., Vice-Chancellor of the Palatine Chancery Court; Mr. Charles H. Heathcote [F.]; Mr. Edward Hewitt [F.]; Mr. John Holden [F.], President of the Manchester Society; Mr. J. F. Holden; Mr. O. Holden; Mr. Jesse Horsfall [F.]; Mr. Edmund Kirby [F.]; Mr. W. Leake, Mr. C. R. Locke; The Very Rev. Dr. Maclure, Dean of Manchester; Mr. T. De Courcy Meade, City Surveyor, Manchester; Mr. F. W. Mee; Mr. A. H. Mills [A.]; Mr. Alderman Mottram, Mayor of Salford; Mr. J. D. Mould [A.]; Mr. T. Muirhead [A.]; Mr. A. J. Murgatroyd; Mr. Albert E. Murray [F.], A.R.H.A.; Dr. J. Niven, Medical Officer of Health, Manchester; Mr.

Paul Ogden [F.], Hon. Secretary of the Manchester Society; Mr. Wm. Owen [A.]; His Honour Judge Parry; Mr. W. Kaye Parry (Dublin); Mr. F. C. Penrose, F.R.S., *President*; Mr. J. E. Phythian, Chairman of the Art Gallery Committee of the Manchester Corporation; Mr. Edward Potts [F.]; Mr. T. M. Rickman [A.]; Mr. Marshall Robinson [A.]; Mr. W. A. Royle [F.]; Mr. Edward Salomons [F.]; Mr. W. R. Sharpe; Professor Simpson, Roscoe Professor of Art, Director of the City of Liverpool School of Architecture and Applied Arts; Mr. John Slater [F.], B.A.Lond.; Mr. P. Gordon Smith [F.]; Mr. W. H. Talbot, Town Clerk of Manchester; Dr. A. W. Ward, Principal of Owens College; Mr. Alfred Waterhouse [F.], R.A., *Past-President*; Mr. Aston Webb [F.], F.S.A., *Vice-President*; Dr. A. S. Wilkins; Sir E. Leader Williams, Engineer of the Manchester Ship Canal; Mr. Percy S. Worthington [A.], M.A.Oxon.; Mr. J. H. Woodhouse [F.]; Mr. F. Zimmern; with representatives of *The Builder*, *The Manchester City News*, *The Manchester Courier*, and *The Manchester Guardian*.

The Lord Mayor of Manchester, who had accepted an invitation to be present, was prevented, through a serious illness, from attending. Among those to whom invitations had been issued were the Bishop of Manchester, who was unable to accept, having to attend a meeting of Bishops in London, fixed for the same day; the Right Hon. A. J. Balfour, M.P. for East Manchester, who wrote greatly regretting that, as the House of Commons was sitting on that day, it would be impossible for him to leave London; and the Principal of Victoria University, Liverpool, already pledged to preside at a special lecture on that evening.

The usual loyal toasts proposed by the President were enthusiastically acclaimed, and abstracts of the succeeding speeches here follow:—

MR. R. KNILL FREEMAN [F.], in proposing the toast of "The Church and its Influence on Architecture," said that from the earliest times the Church had exerted a distinct and very active influence on Architecture. All the best work of Egypt, India, or other countries under the sway of the old religions, was dedicated to the Great Unseen—the Great Architect of the Universe. That feeling had been carried to perfection in the Christian religion, and in the buildings that religion had evoked. In the churches of Germany, in those of Italy and of our own country, in the most elaborate and gorgeous cathedrals or in the simplest and most homely village churches, one found the same feeling. Gothic architecture had been in all of them an embodied crystallised religion. One great reason why the ecclesiastical buildings of the past had been so successful in embodying and incarnating the Christian religion was that their erection was part of the religion of those who built them; and the more nearly we could approach that feeling at the present day, and do away with the hard-and-fast principle of letting to the lowest tender, the better it would be both for architects and Architecture. While considering the influence of the Church on Archi-



ture, its converse must not be lost sight of, namely, the influence Architecture had exercised on the Church. Architecture and all the beautiful arts were the handmaidens of Religion, and helped the Church very substantially in its work. The mind was elevated and the higher feelings appealed to by Architecture and Sculpture in a way the most careful sermon very often failed to effect, and the architect who recognised this aspect of his art was the man who realised its best developments.

THE VERY REV. DR. MACLURE, Dean of Manchester, responded to the toast, observing that those responsible were most anxious that the very best architects should direct any enterprise taken in hand by Mother Church. The architects of the past were imbued with a very religious spirit—a spirit of deep attachment and obligation to their art. Present-day architects, however, could hardly fail to be somewhat affected by the circumstances of this utilitarian age, when the lowest tender had the greatest attraction for the many. For himself, he had no love for the lowest tender, or for the poorest style of architecture. He felt a great responsibility in touching any venerable edifice which had been handed down to them from past ages; but there might arise circumstances when a new departure must be taken. He hoped the influence of the Church upon Architecture would continue. Unhappily there were prejudices abroad which, under the specious name of theological opinion, seemed to run counter to the best principles of Art. There were persons who objected to anything of the character of statuary in their churches, under the idea that it would lead people into wrong theological paths. A friend of his, a man of great culture, belonging to the Jewish persuasion, had remarked to him a while ago that he thought his people had blundered sadly over the Second Commandment, and that if they had only understood that Commandment aright, the sanctuaries of the Jewish Church would not have been so utterly devoid at the present moment of any specimens of the symbols of art. There was no fear of people at the present day falling down and worshipping graven images. He contended that everything that was beautiful in nature, whether it be in the shape of a man or in the shape of a flower, whatever God had created, should find its place in the domain of architecture, whether for sacred or secular uses; and he believed the architects of the present day were perfectly competent to produce such representations. In replying to this toast he took “the Church” in the widest acceptation of the term, and he hoped that every Nonconformist chapel would follow the Church of England churches, and attain as near as it possibly could to the highest ideals of the architect’s art.

MR. ALFRED WATERHOUSE [F.], R.A., proposed “The Bench and Bar.” Referring to

the Law Courts in the Strand, he said he had heard the building spoken of in terms of not altogether unmixed praise by those who had to use it. But as for a brief period he had been architectural clerk to the Royal Commission for the Courts of Justice, and afterwards a competitor with Mr. Street, he was in a position to say a word or two in vindication of that great architect’s name. Mr. Street was hampered by innumerable instructions—many of a most restrictive character—one, for instance, prescribing the level of the Central Hall, which had to be at least one storey below the level of the Courts. Architects knew the difficulty in which such an instruction would place the designer. It prevented him from making the Hall of use in draining the corridors of the crowds of idlers which frequented them. If Mr. Street had had a clearer field for the exercise of his genius, both Law and Architecture would have had cause to congratulate themselves.

MR. SAMUEL HALL, Q.C., Vice-Chancellor of the Palatine Chancery Court, in reply, said he had often longed to speak to a professional body of architects, and he hoped what he proposed to say would be taken in good part. He was extremely glad to find Mr. Waterhouse proposing this toast, for he should like to say that as barristers they wanted chambers like those designed by Mr. Waterhouse, which he had himself occupied for many years in Lincoln’s Inn. Except, perhaps, in the matter of cost, they were models of everything that chambers ought to be. If architects could contrive to give them all the grace of art and all the excellent requisites that were provided in those chambers at something like working prices, Mr. Waterhouse would have earned the eternal gratitude of the Bar. Speaking again for those lawyers who did not enjoy the advantage of living in Manchester, they wanted Courts and Court buildings like the Court buildings in Manchester. He had practised, and sat some time as a Judge, in the Manchester Assize Courts, and had had many years’ experience in London in the old Lincoln’s Inn Courts, and in the Royal Courts of Justice, and he said again deliberately that what they wanted all over the country were Courts like the Manchester Assize Courts; and what they did not want were Courts like the Royal Courts of Justice. Whatever the cause, he firmly believed Mr. Street was not to blame. With regard to the Central Hall, the main object should have been to provide a place into which everybody should go, into which every Court should empty. It should have formed a quadrangle, with the Courts ranged around where one could go straight across from one Court to another. Instead of that, there was a deep gulf. They might just as well—for all practical purposes of convenience—have dug a deep gulf in the middle of the Strand and fenced it round, and said, “What a beautiful piece of architecture

"this is!" The Courts were very draughty, and the warming, ventilation, and acoustical properties abominable. Speaking as a practical man, he should say that the first thing in all buildings was to adapt them to the purpose for which they were intended; then outside ornamentation would follow, because outside ornamentation, outside design, unless it were fitted with something useful and appropriate inside, was altogether idle and meaningless.

HIS HONOUR JUDGE PARRY proposed "The Corporations of Manchester and Salford," making regretful reference to the absence of the Lord Mayor of Manchester.

MR. ALDERMAN MOTTRAM, Mayor of Salford, acknowledged the toast. The interests of Manchester and Salford, he said, were identical, and both Corporations were greatly indebted to the architects. Manchester had many noble buildings, and three of the finest of them had been erected by Mr. Waterhouse—namely, the Assize Courts, the Town Hall (which was certainly a palace in its way), and Owens College. Salford did not possess many large public buildings, but they were making great progress. The new Technical Institute, erected by a Manchester architect, Mr. Henry Lord, was, he considered, as fine a piece of work of that class as could be found in the North of England, and—he said it with great respect—London architects might take a lesson from it. The School Board offices and schools, too, were designed by Manchester architects, Messrs. Woodhouse & Willoughby, and the buildings did them very great credit.

MR. W. H. TALBOT, Town Clerk of Manchester, also replied to the toast, and, after a reference to the Institute motto and Charter, observed that the opening words of the latter were extremely felicitous: that the association was for the general advancement of civil architecture, it being an art esteemed and encouraged in all enlightened nations as tending greatly to the embellishment of towns and cities. That was exactly what was wanted. The Corporation of Manchester might pride itself upon the improvements it had effected in their city. They had expended two millions of money in improvements, the Town Hall itself having cost at least one million sterling. The proper housing of the working classes, upon which large sums had been spent recently by the Corporation, was a difficult problem, and he wished the Institute could throw some light on it. Whether its powers were like those of the elephant, which was supposed to be able to lift a needle or pull up a tree by its roots, he did not know; but if in its investigations in populous districts a satisfactory scheme were found in operation, the Corporation of Manchester would be extremely grateful for any advice the Institute could afford. They desired to see in Manchester in all their future buildings, if not the

highest aspects of architecture, the simple requirements of stability, utility, and beauty. He was sure that the efforts of the Institute, by raising the standard of public taste, would create in many of the urban communities a desire to erect suitable municipal buildings. He assured those who had come from London as representing the Institute that their presence in Manchester was looked upon as an event of importance.

MR. THOMAS DREW [F.], R.H.A., President of the Royal Institute of the Architects of Ireland (Dublin), who proposed the toast of "Architecture and the Sister Arts," said he did not associate those arts with figures in a pediment, with Sculpture at the top, Painting in the centre, and Architecture as a subsidiary art at the foot. In the last forty years, by the efforts of the profession generally, and of men who had been great masters of the art, Architecture, as the oldest and the mother of the arts, had taken the top place in the pediment, with the sister arts grouping themselves about it. He thought, indeed, it should be represented in the form of a lusty man, with the other arts grouping themselves about his knees. He believed in the freemasonry of art. The city from which he had come was not very small, but it had a marked peculiarity—a wonderful fellowship existed in the arts. He had lived in Dublin thirty years, and there was not a sculptor, painter, or musician there that he did not know, and they lived harmoniously together. What had been done for the arts in the way of advancement? They looked across from Ireland to see what had been done in art education. They looked across to Manchester, to its great Art Gallery, its technical education and examinations, and to the professorship to be founded in Owens College. That was a valuable hint to their lazy old University of Dublin. In Dublin they were behind the times: their municipality had done nothing for architecture and the arts, except, to some extent, music. The secret was that in Manchester the arts were represented on the City Council. Mr. Phythian, whose name was associated with the toast, had a great hold and position on the Municipal Council, and had consequently been able to render signal service to art in Manchester. With regard to the city of Dublin, they had something of old art and natural scenery worth seeing, and he should like to say, on behalf of the Institute of Ireland, that nothing would give them greater pleasure than to meet any of their brethren from Manchester. He could promise them a most cordial and hospitable reception, and he hoped they would accept the invitation.

MR. J. ERNEST PHYTHIAN, Chairman of the Art Gallery Committee of the Manchester Corporation, said that undoubtedly municipal authorities must have a considerable influence upon the progress of the arts. Manchester was pre-eminently and of necessity a utilitarian city.



Art was there, in large measure, an exotic. But many years ago the business-men of Manchester had subscribed the means, and built the Gallery in Mosley Street, which had ever since been devoted to the purposes of art. Their Town Hall testified to the fact that Manchester was now awake to the necessity of linking together architecture, sculpture, painting, and the minor decorative arts. As part of their municipal system of technical instruction, they had a School of Art, to which there would shortly be added a museum, to be used, not merely for the textile products of Manchester, but for the illustration of art. In that museum, also, they had made up their minds to link together architecture, sculpture, and painting, to show, from the past history of art, that, in order that any one of those arts should reach the highest possible level, it must invite the co-operation of the others.

MR. JOHN SLATER [F.], B.A. Lond., proposed "The Victoria University and its Colleges." The time, he said, had long gone by when it was considered that if a boy were intended for mercantile pursuits the best thing to do was to take him from school at the age of fourteen, when his real education was only beginning, and to plunge him at once into the vortex of commercial life, with but a smattering of education. Much the same idea used to be held with regard to the architectural profession. If a boy showed a taste for drawing, his fond parents considered any general culture superfluous, and pitchforked him into an architect's office, there to pick up his general education as best he could. All that had been changed, and the Institute had furthered the change by organising a scheme of examinations, with the object of diverting architectural education into the proper channel. It was quite a common thing now for a boy to pass from school to college, and then, after taking his degree, to turn to business pursuits. His aspirations were raised, and his horizon broadened in consequence. Differences of opinion existed as to the advisability of multiplying the number of degree-giving bodies, but there could be no doubt as to the claims of Manchester, which had done so much for education, that it should be the centre and home of a new University. He remembered the old gloomy mass of inconvenient buildings which formed the first habitation of Owens College; and contrasting them with the stately edifice which now adorned the city, he could not but feel that the Owens College, and the sister colleges of Leeds and Liverpool, had made out a good claim to be constituted into a University. The University buildings of Leeds and Liverpool, as well as the Owens College in Manchester, were due to the genius of one man, and it was a source of great gratification to see among them the eminent architect of those buildings, Mr. Alfred Waterhouse. In making Mr. Waterhouse one of the first recipients of an honorary degree from the

Victoria University, an exceedingly fitting compliment had been paid by the University to the architect of the beautiful shrine in which it was lodged. It was an act which conferred equal honour upon both Mr. Waterhouse and the University. The Liverpool College had already a Chair of Architecture, but Owens College had not. He believed, however, that there was hope of such a Chair being established, and it would be a great advantage when it came to pass. But even without that, there were many classes in the College which architectural students could most advantageously attend. Of course, a new University lacked the traditions and antiquity, the long roll of honoured names—warriors, statesmen, and poets—that had helped to make English history; it lacked the old-world type of buildings surrounded by their immemorial elms and oaks which made a walk through the Colleges of Oxford and Cambridge a dream of delight. The new University had still its traditions to make—its alumni had still to write their names on the pages of history; and as to its surroundings, it might possibly not be beyond the wit of man a hundred years hence to make the surroundings of Manchester beautiful. One thing an enlightened Corporation should always bear in mind: it should endeavour to contrive that the noble buildings of their city should have ample space round them. Nothing was more crippling for a fine building than to be surrounded by a number of mean buildings in close proximity. He had much pleasure in coupling with this toast the name of Dr. Ward, Principal of Owens College.

Dr. A. W. WARD, Principal of Owens College and Vice-Chancellor of the Victoria University, in responding, said that with regard to the system of education at the College, there was no institution connected with any of the fine arts which had more actively interested itself in maintaining a connection between professional and general higher education than the Royal Institute of British Architects. They could co-operate with such a College as the Owens College in three ways. It was undoubtedly the right view that those who entered a liberal profession such as architecture should have a preliminary liberal training. Whether that liberal training was received within the walls of a university college or in the higher forms of their great grammar schools mattered not; but that such an education should be received should continue to be insisted on by the Institute. Secondly, it was a mistake, except in cases where technical training was part of the system of a college, to attempt technical training for a particular profession within the walls of the college; and a blunder to endeavour to train architects, or musicians, or professors of any of the fine arts, within the walls of an institution which was not specially equipped for that purpose. But, notwithstanding, in that second stage it was possible to pervade and interpenetrate the system of teach-

ing in university colleges by the spirit of such an art as architecture. Many branches of their training—history, and religious history in particular, to wit—could only be carried on with constant and continuous reference to the fine arts, and to architecture in particular. But, thirdly and lastly, it was true that in university colleges there should be some means found for specially impressing upon their students the history of the great arts. It was not foreign to the purpose of university colleges that professorships of fine arts should be established in them. He heard with great pleasure that thoughts were entertained in Manchester of establishing such a professorship at Owens College, where it would be productive of great good, not only directly but indirectly. He wished the greatest prosperity to the Institute. The most practical way towards securing the means of such prosperity was by influencing County Councils and District Councils, who, under the new democracy, were the dispensers of that which promoted the advancement of the community.

MR. JOHN ELY [F.] proposed "The Visitors," coupling with the toast the name of Sir Leader Williams. The list of visitors present, he observed, might be taken as an example of the wide range of matters with which architects were connected, and with which they had from time to time to make their acquaintance, and show some knowledge of. Whether they could bring into that list the science of engineering, he could not say. Engineering, as exemplified in the Manchester Ship Canal, might have a great influence upon architecture, and it might be that the boom which prevailed in architecture at the present time in Manchester was owing in some degree to the influence of the Ship Canal.

SIR E. LEADER WILLIAMS, Engineer of the Manchester Ship Canal, responding for the Visitors, said that to some extent engineers and architects were bound together, and sometimes their joint labours resulted in a very happy combination—as in the case of the Tower Bridge. The engineer might sometimes with advantage call in an architect to make his work more sightly. Looking at some of the Roman aqueducts, he felt that the engineering works of the present day were not, after all, what they might be. The great cathedrals, abbeys, and castles of England, however, even engineers must be proud of. The country owed much to architects. Engineers were utilitarians; they brought countries together, and utilised the commercial energies of different worlds; in that sense they helped the architects.

PROFESSOR SIMPSON, Director of the School of Architecture and Applied Arts, Liverpool, proposed "The Royal Institute of British Architects." In his opinion the most interesting work done by the Institute consisted in the very valuable Papers read from time to time in its rooms.

Formerly those Papers were contributed by architects, or others interested in the art; but of late short Papers had been delivered by craftsmen also—representative men in the different arts and crafts allied to architecture. The value of those Papers was not only great as regards the matter contained in them, but they tended to bring about that union between the different arts and crafts which so many were anxious to see accomplished. One exceedingly useful feature of the Institute was its being in touch and in cordial relationship with foreign architects and foreign Societies. By these means all countries were brought into connection, tending to show that Art had no nationality. He himself had benefited by this correspondence when, being called upon to report upon the lighting of picture galleries, the introductions given to him by the Secretary of the Institute to architects in Antwerp and Brussels proved of the greatest assistance, and enabled him to get information otherwise most difficult, if not impossible, to obtain. But the work of the Institute was not confined to benefiting its members only. It offered every year a large number of very valuable prizes. It was interesting to look down the list of the old prizemen, and to see that the men who took the prizes of the Institute ten to fifteen or twenty years ago were the architects of to-day. It was not necessary to refer to the many able and distinguished men who had been and are members of the Institute, but he would mention a few of the distinguished men who had filled the office of President, commencing with Mr. Cockerell, the first architectural President, whose work still lived among them, and was likely to live. They had several fine examples in Liverpool. Then, passing on to William Tite, the champion of Classic, George Gilbert Scott, and George Edmund Street—friendly foes and champions of the great Gothic Revival—Mr. Alfred Waterhouse, and others. It was not easy to fill the post which had been held by such men, but he could feel absolutely certain that it was most worthily filled by the present President. Mr. Penrose had just returned from his labour of love—his visit to Athens—to see if it were not possible to retain that masterpiece of the world's art, the Parthenon, for another 2,000 years. All were glad to have the opportunity of welcoming him back on his return from that visit. Mr. Penrose was not only known as an architect, but as a scholar, and as one of the greatest living authorities on ancient art, his book on Athenian architecture being a standard work. It was with great pleasure that he coupled with the present toast the name of Mr. Penrose.

THE PRESIDENT thanked the Meeting on behalf of the Institute for the extremely kind reception given this toast. The Institute, he regretted to say, did not embrace the whole profession, but it was gaining in that respect. The Council were quite disposed to listen favourably to any modifi-



cations in their procedure which would lead to others joining them, provided that they did not in the slightest degree interfere with the necessary regulation that their practice should be thoroughly professional. The Examinations they had conducted for many years, which had received high encomiums from the Principal of Owens College, would help to maintain the stability of the Institute. Established as it had been for more than sixty years, it might be reckoned in these days quite an ancient institution. He hoped it would continue to prosper, and be more and more successful in advancing the great objects for which it was established. But the point that above all things placed the Institute upon so firm a basis was its connection with the Allied Societies. It was of the greatest possible satisfaction to him that during his tenure of office he had been called upon to preside at this first Annual Dinner in the provinces, and was especially glad that it had been held in Manchester, from the architects of which city the Institute had always derived encouragement. He wished to thank Professor Simpson for his very kind remarks. With regard to the Parthenon, the building, he thought, would be capable of resisting a much greater earthquake than the last. No serious damage had resulted from that, but points of weakness and defects had been disclosed which would be remedied, and without any disfigurement to the work. The President then proposed the toast of "The Allied Societies," and asked Mr. Holden to respond.

Mr. JOHN HOLDEN, President of the Manchester Society, said he had very great pleasure in responding to the toast of "The Allied Societies," more particularly as he had been personally associated with all the movements which had resulted in the close connection now existing between the Institute and the Provincial Societies, a connection he hoped would be permanent. He considered that all the members of the profession throughout the country should be under one central control, so far as the broad principles of their work were concerned. There were, no doubt, and would be, some small differences, due to local customs, but the fewer of these the better. On the broad principles they should be united, and there should be no doubt in the minds of the public upon that question. Wherever the architect hailed from, whether from Land's End or John-o'-Groats, the public should know what his duties were and what the nature of his employment should be. That was one of the chief things the connection between the Institute and the Allied Societies would bring about. So far as the Allied Societies were concerned, the Institute might always rely upon loyal support from them in all matters connected with the honour and integrity of the profession. The Manchester Society fully appreciated the honour of the Institute holding its first non-Metropolitan Dinner in Manchester.



9, CONDUIT STREET, LONDON, W., 11<sup>th</sup> June 1896.

## CHRONICLE.

### THE ANNUAL ELECTIONS.

#### THE COUNCIL.

At the Business General Meeting of Monday, 8<sup>th</sup> inst., the Council for the year of office 1896-97 were declared to be duly elected as follows:—

PRESIDENT.—Professor Aitchison, A.R.A.

VICE-PRESIDENTS.—Alex. Graham, F.S.A.; Aston Webb, F.S.A.; Ernest George; and William Milner Fawcett, M.A.Cantab., F.S.A.

HON. SECRETARY.—William Emerson.

MEMBERS OF COUNCIL.—John Belcher; William Douglas Caröe, M.A.Cantab, F.S.A.; John McKean Brydon; Richard Phené Spiers, F.S.A.; Edward William Mountford; Arthur Cates; John Alfred Gotch, F.S.A. (Kettering); John Slater, B.A.Lond.; Charles Hadfield (Sheffield); Campbell Douglas (Glasgow); Thomas Blashill; Paul Waterhouse, M.A.Oxon.; Henry Louis Florence; Edwin Thomas Hall; Thomas William Cutler; Benjamin Ingelow; Joseph Oswald (Newcastle); and Edward Augustus Gruning.

ASSOCIATE-MEMBERS OF COUNCIL.—William H. Atkin Berry and James Sivewright Gibson.

REPRESENTATIVES OF ALLIED SOCIETIES.—William Larkins Bernard (Bristol Society); Albert Nelson Bromley (Nottingham Society); Thomas Drew, R.H.A. (Royal Institute of Ireland); John Ely (Manchester Society); William Henman (Birmingham Association); Henry Perkin (York Society); Arnold Thorne (Devon and Exeter Society); Edwin Montgomery Bruce Vaughan (Cardiff Society); and Thomas Lennox Watson (Glasgow Institute).

REPRESENTATIVE OF THE ARCHITECTURAL ASSOCIATION (London).—Beresford Pite.

#### THE STANDING COMMITTEES.

At the same Meeting the following Fellows and Associates were declared duly elected to serve on the respective Standing Committees for the ensuing year of office, viz.:—

##### ART STANDING COMMITTEE.

Fellows.—Ernest George; Alfred Waterhouse, R.A.; John McKean Brydon; John Belcher; Edward Ingress Bell; William Douglas Caröe

M.A.Cantab., F.S.A.; Edward William Mountford; James Brooks; Sir Arthur Blomfield; A.R.A.; and John Macvicar Anderson.

*Associates*.—Henry Thomas Hare; Beresford Pite; Owen Fleming; John Begg; James Sive-wright Gibson; and William Henry Romaine-Walker.

#### LITERATURE STANDING COMMITTEE.

*Fellows*.—Alex. Graham, F.S.A.; Richard Phenè Spiers, F.S.A.; Arthur Edmund Street, M.A.Oxon.; Paul Waterhouse, M.A.Oxon.; Henry Louis Florence; Benjamin Ingelow; Sydney Smirke; Charles Harrison Townsend; William Frederick Unsworth; and John Hebb.

*Associates*.—Andrew Noble Prentice; Percy Scott Worthington, M.A.Oxon.; Leslie Waterhouse, M.A.Cantab.; Arthur Smyth Flower, M.A.Oxon.; Ravenscroft Elsey Smith; and Banister Flight Fletcher.

#### PRACTICE STANDING COMMITTEE.

*Fellows*.—Edwin Thomas Hall; Edward Augustus Gruning; Samuel Flint Clarkson; Thomas Batterbury; Edmund Woodthorpe, M.A.Oxon.; Joseph Douglass Mathews; Lacy William Ridge; Henry Cowell Boyes; Joseph Stanislaus Hansom; and Walter Hilton Nash.

*Associates*.—William H. Atkin Berry; Henry Thomas Hare; George Richards Julian; Augustus William Tanner; Frederick Henry Appleton Hardecastle; and Robert Stark Wilkinson.

#### SCIENCE STANDING COMMITTEE.

*Fellows*.—Lewis Angell, M.Inst.C.E.; Percival Gordon Smith; William Charles Street, Assoc.Inst.C.E.; Herbert Duncan Searles-Wood; Arthur Baker, R.C.A.; John Salmon Quilter; William Warlow Gwyther; Frederic Richard Farrow; Lewis Solomon; and Benjamin Tabberer.

*Associates*.—Thomas Locke Worthington; Henry William Burrows; Max. Clarke; Matthew Garbutt, Assoc.M.Inst.C.E.; Bernard John Dicksee; and George Pearson.

#### Expiration of Mr. Penrose's Presidency.

At the conclusion of the business before the Meeting of the 8th inst., a vote of thanks to the outgoing President, Mr. Penrose, moved by Mr. John Slater [F.], seconded by Mr. Alex. Graham, F.S.A., *Vice-President*, and supported by Mr. Wm. Woodward [A.], was carried by acclamation. The speakers' remarks, which were received by the Meeting with every token of appreciation, together with Mr. Penrose's reply, here follow:—

Mr. JOHN SLATER [F.]: Gentlemen, I am quite sure you will think it fitting that on this the last occasion upon which our esteemed President, Mr. Penrose, sits in that chair—although I hope that he may be spared for many years to attend the meetings of the Institute—we should pass a vote of thanks to him for his conduct of our proceed-

ings during the two years he has been President. We must all feel that the annals of the Institute would have been wanting in something if the name of Mr. Penrose, who has a European reputation, had not been inscribed on the roll of its Presidents. It would be impertinent on my part to attempt to detail to you his many qualifications for the office. We must all rejoice that his energy and activity have enabled him to fill the office as he has done, and with so much advantage to the Institute, at his late stage of life. We on the Council shall ever remember his presidency for the kindness with which he has met and presided over us; and I am confident that the present assembly will endorse what I say by supporting a very hearty vote of thanks to him, and unite in wishing him many years of activity to prosecute his architectural and archæological labours.

Mr. ALEX. GRAHAM [F.], F.S.A.: Gentlemen, as a matter of form such a motion as this has to be seconded, and I have the honour as well as the pleasure of performing that duty. You will all bear with me in saying that nothing but kindness and courtesy have proceeded from that chair during the last two years. The President has not only given up his valuable time to the duties of his office, but has shown great consideration to the members of the Council and to every member of the Institute whenever he has been called upon to interest himself in its affairs. One and all must unite in a feeling of the deepest regret that his term of office has expired, and that we are now to lose his excellent and amiable services as President. Let us hope that he may be among us for many years to come, and that he may still continue to take a part in the affairs of the Institute.

Mr. WILLIAM WOODWARD [A.]: Mr. President, I do not profess to represent the Associates of the Institute, but I am perfectly sure that I am only giving expression to the views of every Associate when I say that we thoroughly endorse every word that has fallen from Mr. Slater and Mr. Graham.

Mr. PENROSE: Gentlemen, I have to thank Mr. Slater and Mr. Graham, and also Mr. Woodward, for the extremely kind way this vote of thanks—which I know myself how little I have deserved—has been proposed and supported, and especially to thank the Meeting for giving it so gratifying a reception. I have to acknowledge a debt of gratitude to all the members of the Institute for the generous way they have supported me in this chair, and it is a matter of the greatest satisfaction to me to feel that I leave with you a kindly remembrance of the past two years, during which I have had the honour of occupying this position.

The Midsummer Examinations: Preliminary and Intermediate.

The Preliminary Examination of architects' pupils and others desirous of qualifying as Pro-



bationers R.I.B.A. will be held in London, Manchester, and Bristol on the 16th and 17th inst. Of the 133 applicants admitted, 23 were previously examined and relegated to their studies, and 25 have been exempted from sitting. The Intermediate Examination of Probationers for registration as Students R.I.B.A. will be held at London and Manchester on the 16th inst. and three following days. To this Examination 68 applicants have been admitted, of whom 20 were relegated from previous Examinations. The London Examinations will be held at the Examination Hall, Victoria Embankment, but the Oral portion of the Intermediate will take place at the Institute on the 18th and 19th inst. The Examinations at Manchester and Bristol respectively will be conducted by the Allied Societies of those centres—that at Manchester is to be held at Standard Chambers, 65, King Street, and that at Bristol at the Fine Arts Academy, Queen's Road, Clifton.

#### The Trinity Hospital or Almshouses [p. 91].

Every one interested in the preservation of London's historical monuments will have learned with satisfaction the decision of the Charity Commissioners in the matter of the Trinity Almshouses. The grounds of the opposition to their removal were stated in the Memorial submitted by the Council of the Institute last year, and evidence in favour of their preservation was given by Mr. Penrose and Mr. Macvicar Anderson at the subsequent inquiry held by the Assistant Commissioner [p. 91]. The Commissioners made known their decision on the 23rd ult., the concluding paragraphs of their judgment being as follows:—

Upon a careful consideration of all the circumstances, the Commissioners, while fully recognising the fact that the corporation have framed their proposals in what they conceive to be the best interests of the beneficiary class, are of opinion that a sufficient case is not made out for any material reduction in the number of the existing almshouses. They are, however, disposed to think that the position and character of the fourteen houses appropriated to Grigg's almswomen, and standing at the extreme north of the site, would justify their removal upon such terms as to secure suitable houses for the present inmates and their successors.

The Commissioners will be prepared to consider in concert with the corporation the details of a scheme for effecting this purpose, and for the general regulation and consolidation of the various trusts which now affect the almshouses of the corporation. The almshouse rebuilding fund might with advantage be included in such a scheme, provision being made for its application primarily for the purpose of a repair fund.

#### The late Edward Armitage [H.A.], R.A.

Edward Armitage, R.A., who died at Tunbridge Wells on the 24th ult. at the age of seventy-nine, had been an Hon. Associate of the Institute since the formation of that class in 1877. Born in London on 20th May 1817, he was educated in France and Germany. In 1837 he entered the studio of Paul Delaroche in Paris, and assisted

that master in the decoration of the hemicycle at the School of Fine Arts. Three years later he sent a large picture, "Prometheus Bound," to the Paris Exhibition of Living Painters. In the following year he contributed to the Cartoon Exhibition at Westminster Hall "The Landing of Julius Cæsar in Britain," which took a first-class prize of £300. In 1844 he contributed to the Westminster Hall exhibition of works in fresco, but without success. At the third competition in 1845 he took a prize of £200 for a cartoon and coloured design, "The Spirit of Religion"; and finally, in 1847, another first prize of £500 was awarded to him for an oil painting, "The Battle of Meeanee," now in the possession of the Queen. During the Russian War he visited the Crimea and painted two pictures, "The Heavy Cavalry Charge at Balaklava" and "The Stand of the Guards at Inkermann." In 1858 he produced a colossal figure entitled "Retribution," and intended to symbolise the suppression and punishment of the Indian Mutiny. In the Upper Waiting-hall of the Palace of Westminster he executed two experimental frescoes, "The Thames with its Tributaries" and "The Death of Marnion." His mural paintings include figures of Christ and His Twelve Apostles, executed for the apse of the Roman Catholic church of St. John at Islington; "St. Francis and his Early Followers before Pope Innocent III." in the same church; and monochrome wall-paintings at University Hall, Gordon Square, designed as a memorial to the late Crabb Robinson. To the Academy Exhibition of 1872 he contributed a design for a frieze entitled "A Dream of Fair Women," in which were grouped in one long panorama the women of the Old Testament. Mr. Armitage was elected A.R.A. in 1867 and R.A. in December 1872, and in 1875 was appointed Professor and Lecturer on Painting to the Royal Academy.

#### Additions to the Library.

*Papers* (No. 9) read before the Engineering Society of the Toronto School of Practical Science have been presented by Professor C. H. C. Wright. The articles on "Lightning Arresters," by Mr. H. P. Elliott; "Planimeters," by Mr. J. W. Bain; "The Action of Heat on Cement," by Mr. J. S. Dobie; and "Aspect and Prospect," by Professor Wright, are amongst those in the volume likely to have most interest for architects. It should, however, be also mentioned that the *Papers* conclude with the results of tests made in the laboratory of the School of Practical Science, by Messrs. Wright and Keele, with the object of determining resistance to crushing offered by piers of ordinary brick, constructed in the same manner and of the same materials as those most commonly used in and about Toronto.

Professor Wright has also presented an illustrated pamphlet entitled *Röntgen Radiation*, by Mr. C. J. McLennan, Assistant Demonstrator in

Physics at Toronto University, which gives an account of experiments in the new photography at the School of Practical Science, Toronto.

The *Engineering Magazine* for June contains an interesting article, amply illustrated and containing numerous plans, on "Domestic Architecture in Washington City," by Mr. Glenn Brown. The latest quarterly part of the *Architectural Record* (Vol. V. No. 4) contains contributions by Professor Banister Fletcher [*F.*] on "The Smaller Houses of the English Suburbs and Provinces," numerous illustrations from photographs of buildings by Messrs. George [*F.*] and Peto, Mr. Norman Shaw, R.A., Mr. Colcutt [*F.*], Mr. Basil Champneys, &c.; by Mr. Barr Ferree [*Hon. Corr. M.*] on "French Cathedrals"; and by Mr. G. A. T. Middleton [*A.*] on "Linear Perspective," &c.

## REVIEWS. XLII.

(115)

### LONDON CHURCHES.

*London Churches of the XVIIth and XVIIIth Centuries. A Selection of the most remarkable Ecclesiastical Buildings, including St. Paul's Cathedral, erected within and around the Ancient City Walls between the years 1630 and 1730, from the Designs of Inigo Jones, Sir Christopher Wren, Nicholas Hawksmoor, and James Gibbs. A Series of Sixty-four Plates, and numerous other illustrations. With Historical and Descriptive Accounts by George H. Birch, F.S.A. Fo. Lond. 1896. Price £4. 4s. net. [B. T. Batsford, 94, High Holborn.]*

Every week makes it more possible for the architect not only to confine the practice of his art to the immediate neighbourhood of his drawing-board, but to survey architecture at large from the same coign of vantage. Mr. Batsford's sumptuous folio just issued, if it does not drive us out hotfoot to see again for ourselves what is here so alluringly displayed, will enable us to practise a still severer economy of boot-leather. Though several of his pupils and successors are represented, ultimately Wren may be said to have been as responsible for their designs as for his own. Whether by the mute confession of his influence, or by the display of a conscious effort to strike an original note, all of them reveal the fount of their inspiration. The whole book, in a word, is a glorification of the master-mind. All lovers of Wren, then—and who would deny himself the title?—will accept this volume as a noble contribution to the full illustration of his life and work, which we must confidently look to the future to give us. So far, even the circumstances of his life have never been quite adequately treated. Much less have his representative works been brought together with any completeness. The present instalment is the nearest approach to such a consummation. But a man so monumental, of so true a modesty, so astonishing a self-reliance, of a genius so complete, deserves a memorial on a scale proportionate to his own.

He is the Gulliver of our Lilliput, and if the credit of English architecture stands high it is partly because we placed our ladders on his broad shoulders. But this is not the place for an appreciation of Wren, and it remains to notice briefly the volume itself. Of the illustrations we may say at once that they are as charming in tone and artistic quality as the points of view are, generally speaking, representative and characteristic. If the pen-and-ink sketches are hardly up to the level of the photographs, they form a very insignificant fraction of the whole, while the letterpress of the Curator of the Soane Museum is just what one would have looked for from so capable and learned a writer. He is, perhaps, not so strictly impersonal as the nature of the publication might have suggested. It is difficult, indeed, to be angry with enthusiasm in such a cause, or to be other than indulgent to the righteous indignation which some modern improvements provoke in him; but the strictures would be better away, while the judgments they convey should be held for good and all, not taken up and laid down. Unhappily Mr. Birch is not always strictly consistent. Speaking of St. Antholin, Budge Row, for instance, he says: "Its beautiful tower and spire was the one existing object which could possibly have relieved the utter banality and commonplace appearance of Queen Victoria Street"; but he seems to have forgotten this by the time he reaches St. Benet, Paul's Wharf, for we now learn that "the church was brought rather prominently into view by the formation of this *fine thoroughfare*." This "*fine thoroughfare*" is "banal," we admit; the Charity Commissioners, even in their corporate capacity, have still humanity enough to be entitled to err, and avail themselves of the privilege;—that also may be conceded; but Mr. Birch's otherwise satisfactory descriptions would not have been the worse if he had ignored these lapses, or showed a more judicial temper in recording them, while criticism of modern work, whether one agrees with or not—and surely his pæan of jubilation over the new reredos at St. Paul's will *not* touch a responsive chord in every breast—seems singularly out of place. The dignity of the publication demanded the suppression of personal predilections, and the sinking of the partisan in the dispassionate chronicler.

A. E. STREET.

(116)

### TEMPLES OF KASHMIR.

*The Tarikh-i-Rashidi of Mirza Muhammad Haidar, Dughlat: A History of the Moghuls of Central Asia. An English version, edited, with Commentary, Notes, and Map, by N. Elias, H.M. Consul-General for Khorasan and Sistan. The translation by E. Denison Ross. 8o. Lond. 1895. Price 25s. net. [Sampson Low, Marston & Co., St. Dunstan's House, Fetter Lane.]*

The author of this book, generally known as "Mirza Haidar," was born at Tashkand in the last year of the fifteenth century; and the history



was written in Kashmir about the years 1544-46. It is strictly historical, and very valuable in that character in relation to Central Asia, and for the details it contains about some of the movements of the Emperor Baber, who was cousin to Mirza Haidar. It also contains some interesting particulars about the Emperor Humayan after his defeat by Shir Khan. Humayan and his principal Amirs retreated to Lahore; the Mirza was with them, and he entered Kashmir, which he conquered and ruled afterwards. It was then that he wrote this history of his time. The author incidentally alludes at times to houses and architectural remains, which are valuable from the date at which he writes, and more particularly owing to the scarcity of references of this kind in that part of the world. His description of the old Hindu temples, or "idol temples," as the Mirza calls them, of Kashmir, and to which he devotes a chapter, would have been of great interest if it had been correct. As it is, the chapter has only one lesson to give us, and that is, a warning not to place too much trust in early historical authors when they write on architectural details. This chapter was kindly communicated to the JOURNAL of the Institute in April 1894 \* by Mr. Elias, with some very accurate notes upon its wild exaggerations, and in the published volume he has still further extended the criticism. It is difficult to explain how an intelligent man like the Mirza could possibly make such palpable blunders in describing the most simple details. If he had never seen the temples, and written only from hearsay, there would have been no difficulty in the matter; but he was on the spot, he was ruler or king at the time, and could have had every stone measured. Everything he touches upon is magnified in the most Brobdingnagian style. The stones range, he says, from three to twenty *gaz*—now the smallest *gaz* or "ell" is one of eighteen inches, which would give us stones of thirty feet in length. His description evidently applies to the Marttand Temple, which I sketched, as well as most of the Kashmir temples, in 1861. I made no measurements, but the size of the stones did not seem at the time to be a matter that would call for any particular notice. If there had been stones of thirty, or even twenty, feet in length, they would most certainly have attracted me. Mirza Haidar also mentions pillars forty or fifty *gaz* in height, figures that are also wildly in excess of the truth. He describes each of these temples as having domes; this again is far from being correct. At the Pandrettan and Páyech Temples the roofs exist at the present day, and they are the same as the other temples had. They are pyramidal, and are evidently derived from a wooden original, of which I have sketches, made in the Himalayas. As a matter of fact the early type may still be seen in the roof of the large musjid in

Srinugger.\* Fergusson was inclined to suppose that the Marttand Temple never had a stone roof, and that in this particular instance it was of wood.†

The "Description of Kashmir" begins at Chapter xcvi., and he gives the following, which may be supposed to refer to the capital city:—

In the town there are many lofty buildings, constructed of fresh cut pine. Most of these are at least five storeys high, and each storey contains apartments, halls, galleries, and towers. The beauty of their exterior defies description, and all who behold them for the first time bite the finger of astonishment with the teeth of admiration. But the interiors are not equal to the exteriors [p. 425].

One reason for quoting the whole of the above passage is to show writers for this JOURNAL that there may be, although old, what would now appear as quite a new style of architectural criticism. A discussion on domes and pendentives, if carried on after the manner of Mirza Haidar, would be quite refreshing. To one familiar with the houses of the Happy Valley, as they are at the present day, the extract has a further interest; because houses "at least five storeys high" are no longer to be found there. If the Mirza is not again exaggerating, the houses he describes must have been very similar to the Tibetan houses, such as the old palace at Leh, or the tall buildings of the Lamaseries, with innumerable storeys. This would be an interesting point, if we could be sure of it, that in the sixteenth century the houses in Kashmir were the same as we now find in Tibet; but our authority is not a safe guide, and judgment must be deferred. His account of the buildings at Yarkand indicates a style somewhat the same as that which he says exists in Kashmir:

In the suburbs are about ten gardens, in which are erected lofty edifices, containing about a hundred rooms each. All these rooms are fitted with shelves and recesses in the walls [*ták* and *tákcha bandi*]: they have ceilings of plaster-work and dados of glazed tiles [*kashí*], and frescoes [p. 297].

The "lofty edifices" and the "hundred rooms" again recall the old palace at Leh; but a Tibetan style at Yarkand would not be a surprise, while the recesses, plaster-work, and glazed tiles are suggestive of Persian influence. These recesses, or niches in panels, are not only useful but ornamental, and might be recommended to architects at home here; they are a marked feature of the Mohammedan style of domestic architecture in Delhi and Agra, where I first saw and appreciated their merits.

Mirza Haidar alludes more than once to buried cities, towns, domes, &c., in the desert which stretches eastward from Kashgar and Yarkand to Lob Nor. These have been mentioned by other authors as having been buried under the sands—which is in harmony with what the Mirza says. Modern travellers give us descriptions of the same

\* See illustration of this musjid in Fergusson's *Indian and Eastern Architecture*, p. 609; and its roof can be compared with those of two Hindu temples at pp. 294, 295.

† An illustration of this temple is given in the JOURNAL, Vol. I. 3rd Series, p. 111.

region, and all agree in representing it as a wretched desert, with shifting sands blown by the wind. Some change must have come over this locality; this supposition is based on an account of at least one town in it, written in the fifth century, by Fa-Hian. This was Khotan, which this Buddhist pilgrim visited on his way from China to India. "This country," he says, "is prosperous and rich [*happy*]: the people "are very wealthy."\* There were numerous monasteries, and the one the pilgrim lodged in had three thousand Buddhist monks. He describes the great car festival, which lasted fourteen days, and every detail he gives suggests the large and thriving population that must have been there.

The Mirza supplies us with some knowledge about the Moghuls which is worthy of notice in reference to the Moghul architecture of India. Fergusson, in writing of that particular style, expresses himself as if the Moghuls had a great love for fine and magnificent buildings, and their desire for splendid tombs is often dwelt upon; his words would almost lead one to suppose that these people had brought this innate taste for beauty and grandeur in architecture from their own country. Now, Mirza Haidar was a Moghul himself, and his book is a history of Moghulistán, and here is what he says of his own people, and the condition in which they were at the time he lived, which was exactly the time when Baber, the first of the Moghuls, founded that dynasty in India: "Most "of the Moghuls had never possessed, or even "lived in, a village—nay, had never even seen "cultivation. They were as wild as the beasts of "the mountains" [p. 153]. Again: "At the "beginning of the reign of Yunus Khán, all the "Moghuls dwelt, according to their old custom, in "Moghulistán: they avoided all towns and cultivated countries [and regarded them] with great "repugnance" [p. 156]. "The Moghuls had "always been this kind of [nomadic] people" [*ibid.*]. This means that they were perfect nomads, living in tents, and could not have had architecture of any kind. If Fergusson had had the advantage of reading this history of the Moghuls, he would most likely have expressed himself differently. Still, I think his words scarcely convey the meaning he intended, for Fergusson knew perfectly well that the Moghul style was only that phase of the Mohammedan architecture of India which belonged to the period of the Moghul dynasty. The Moghuls brought nothing with them, but during their rule the Mohammedan power reached its zenith, and was able, from its wealth, to produce a series of splendid structures, almost all of which may yet be seen in or near to Delhi and Agra, and hence the reputation of the style; but nothing that belongs to it came from Moghulistán.

WILLIAM SIMPSON.

\* Beal's Translation, Vol. I. p. xxv.



## MINUTES. XV.

At the Fifteenth General Meeting (Business) of the Session, held Monday, 8th June 1896, at 8 p.m., Mr. F. C. Penrose, F.R.S., *President*, in the Chair, with 15 Fellows (including 10 members of the Council), and 8 Associates (including 2 members of the Council), the Minutes of the Meeting held 18th May 1896 [p. 443] were read and signed as correct.

The Hon. Secretary announced the decease of Edward Armitage, R.A., *Hon. Associate*.

The receipt of donations to the Library was announced [see *Supplement*], and an expression of thanks to the several donors was ordered to be entered on the Minutes.

## THE ANNUAL ELECTIONS, 1896-97.

### THE COUNCIL.

The President read the report of the Scrutineers appointed by the Annual General Meeting [p. 412] to conduct the election of the Council.\* The following were declared to be the results:—

**President.**—Professor Aitchison, A.R.A. [unopposed].

**Vice-Presidents (4).**—William Milner Fawcett; Ernest George; Alexander Graham; Aston Webb [unopposed].

**Hon. Secretary.**—William Emerson [unopposed].

**Members of Council (18).**—John Belcher, 391; William Douglas Caröe, 389; John McKean Brydon, 385; Richard Phené Spiers, 381; Edward William Mountford, 379; Arthur Cates, 374; John Alfred Gotch, 373; John Slater, 363; Charles Hadfield, 360; Campbell Douglas, 357; Thomas Blashill, 353; Paul Waterhouse, 348; Henry Louis Florence, 341; Edwin Thomas Hall, 337; Thomas William Cutler, 333; Benjamin Ingelow, 328; Joseph Oswald, 316; Edward Augustus Gruning, 309. The following candidates are not elected:—*Henry Heathcote Statham*, 287; *Percival Gordon Smith*, 263; *William Young*, 257; *Ralph Selden Wornum*, 228.

**Associate-members of Council (2).**—William H. Atkin Berry, 290; James Sivewright Gibson, 230. The following candidates are not elected:—*Thomas Miller Rickman*, 196; *Arthur Smyth Flower*, 154.

**Representatives of Allied Societies (9).**—William Larkins Bernard (Bristol Society of Architects); Albert Nelson Bromley (Nottingham Architectural Society); Thomas Drew (Royal Institute of the Architects of Ireland); John Ely (Manchester Society of Architects); William Henman (Birmingham Architectural Association); Henry Perkin (York Architectural Society); Arnold Thorne (Devon and Exeter Architectural Society); Edwin Montgomery Bruce Vaughan (Cardiff, S. Wales, and Monmouthshire Architects' Society); Thomas Lennox Watson (Glasgow Institute of Architects) [unopposed].

**Representative of the Architectural Association (London).**—Beresford Pite [unopposed].

[The above members declared to have been duly elected compose the Council.]

\* Of the fourteen members (8 Fellows and 6 Associates) appointed to act as Scrutineers, eight attended, viz.:—*Fellows*, Messrs. F. T. Baggallay, R. F. Chisholm, John Norton, John S. Quilter, and Hugh Stannus; *Associates*, Messrs. Max. Clarke, H. Vaughan Lanchester, and Herbert A. Satchell. A note appended to the Scrutineers' Report states that 468 envelopes containing voting-papers were received by the Scrutineers, out of which 29 papers were set aside in consequence of informality.



**Auditors.**—*Fellow*, Edmund Woodthorpe; *Associate*, Owen Fleming [unopposed].

#### THE STANDING COMMITTEES.

The President read the Report of the Scrutineers appointed by the Annual General Meeting [p. 412] to conduct the election of the four Standing Committees. The following were declared to be the results:—

##### Art Standing Committee.

**Fellows (10).**—Ernest George, 391; Alfred Waterhouse, 361; John McKean Brydon, 353; John Belcher, 344; Edward Ingress Bell, 344; William Douglas Caröe, 343; Edward William Mountford, 343; James Brooks, 342; Sir Arthur Blomfield, 321; John Macvicar Anderson, 313. The following candidates are not elected:—*William Young*, 186; *Ralph Selden Wornum*, 157; *William Samuel Weatherley*, 139.

**Associates (6).**—Henry Thomas Hare, 360; Beresford Pite, 315; Owen Fleming, 272; John Begg, 271; James Sivewright Gibson, 259; William Henry Romaine-Walker, 250. The following candidates are not elected:—*George Campbell Sherrin*, 243; *George Kenyon*, 234; *William Arthur Webb*, 140.

##### Literature Standing Committee.

**Fellows (10).**—Alexander Graham, 379; Richard Phené Spiers, 379; Arthur Edmund Street, 374; Paul Waterhouse, 366; Henry Louis Florence, 358; Benjamin Ingelow, 355; Sydney Smirke, 352; Charles Harrison Townsend, 331; William Frederick Unsworth, 303; John Hebb, 244. The following candidate is not elected:—*George Henry Bibby*, 233.

**Associates (6).**—Andrew Noble Prentice, 352; Percy Scott Worthington, 339; Leslie Waterhouse, 338; Arthur Smyth Flower, 336; Ravenscroft Elsey Smith, 292; Banister Flight Fletcher, 240. The following candidates are not elected:—*Arthur Thomas Bolton*, 227; *John Tavenor Perry*, 190.

##### Practice Standing Committee.

**Fellows (10).**—Edwin Thomas Hall, 307; Edward Augustus Gruning, 303; Samuel Flint Clarkson, 289; Thomas Batterbury, 284; Edmund Woodthorpe, 278; Joseph Douglass Mathews, 272; Lacy William Ridge, 270; Henry Cowell Boyes, 256; Joseph Stanislaus Hansom, 255; Walter Hilton Nash, 244. The following candidates are not elected:—*Thomas Harris*, 208; *Franc Saddleir Brereton*, 186; *William Warlow Gwyther*, 169; *Graham Clifford Audry*, 160; *Alexander Henry Kersey*, 158; *George Hubbard*, 118.

**Associates (6).**—William H. Atkin Berry, 349; Henry Thomas Hare, 329; George Richards Julian, 308; Augustus William Tanner, 307; Frederick Henry Appleton Hardcastle, 279; Robert Stark Wilkinson, 268. The following candidates are not elected:—*Francis Thomas Wilberforce Goldsmith*, 251; *Thomas Edward Mundy*.

##### Science Standing Committee.

**Fellows (10).**—Lewis Angell, 359; Percival Gordon Smith, 355; William Charles Street, 352; Herbert Duncan Searles-Wood, 347; Arthur Baker, 335; John Salmon Quilter, 317; William Warlow Gwyther, 312; Frederic Richard Farrow, 295; Lewis Solomon, 286; Benjamin Tabberer, 276. The following candidates are not elected:—*Henry Dawson*, 275; *Professor Banister Fletcher*, 275.

**Associates (6).**—Thomas Locke Worthington, 312; Henry William Burrows, 305; Max. Clarke, 304; Matthew Garbutt, 302; Bernard John Dicksee, 277; George Pearson, 266. The following candidates are not elected:—*Robert Langton Cole*, 209; *Edward William Malpas Wonnacott*, 188; *Bruce John Capell*, 135.

On the motion of the Hon. Secretary, seconded by Mr. Thomas Blashill [F.], a cordial vote of thanks was

passed to the Scrutineers for their services in conducting the elections.

#### ELECTION OF MEMBERS.

The President, referring to the statement made by the Chairman of the Meeting of the 18th May [p. 436] relating to the candidature and election of Fellows, announced that the matter was still under consideration by a Special Committee of the Council. In reply to a question from Mr. Woodward, the President stated that it was impossible to fix the precise date when the Report would be ready.

The following candidates for membership were elected by show of hands, under By-law 9, namely:—

##### As Associates (7).

JAMES McCURREY CABLE, F.S.I. (*Qualified* 1895).  
GEORGE MACFIE POOLE (*Qualified* 1895), Sydney, N.S.W.

ARTHUR ERNEST McKEWAN (*Probationer* 1890, *Student* 1891, *Qualified* 1894), Birmingham.

HERBERT HENRY DUNN (*Qualified* 1895), Lincoln

JOHN FORD (*Qualified* 1895), Devon.  
JAMES GUTHRIE HENDERSON (*Qualified* 1895).  
JAMES GREENWOOD STEPHENSON (*Qualified* 1894).

##### As Hon. Associates (6).

ARTHUR THOMAS WALMISLEY, M.Inst.C.E.  
SIR BENJAMIN BAKER, K.C.M.G., F.R.S., LL.D.,  
President of the Institution of Civil Engineers.  
HORATIO WALTER LONSDALE.  
T. RAFFLES DAVISON.  
HAY FREDERICK DONALDSON, M.Inst.C.E.  
JAMES ANDREW STRAHAN, M.A., LL.B., Barrister-at-Law, Regius Professor of Law, Queen's College, Belfast.

A vote of thanks to the retiring President, Mr. Penrose, moved by Mr. John Slater [F.], B.A., and seconded by Mr. Alex. Graham [F.], F.S.A., having been carried by acclamation, and briefly acknowledged [p. 463], the proceedings terminated, and the Meeting separated at 9 p.m.

## ALLIED SOCIETIES.

### OFFICERS AND COUNCILS 1896-97.

#### The Liverpool Society.

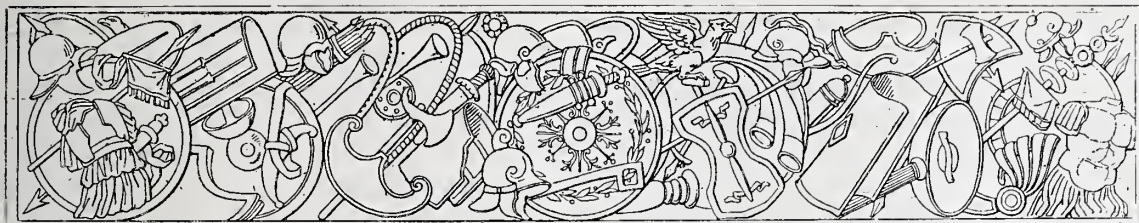
President, Mr. Geo. Bradbury; Council, Messrs. A. Culshaw [F.], T. E. Eccles [A.], H. W. Keef, Professor F. M. Simpson, E. A. Ould, W. E. Willink [A.], J. Woolfall, J. W. Blakey [A.], T. W. Haigh; Hon. Treasurer, Mr. J. Dod; Hon. Sec., Mr. H. L. Beckwith; Library Committee, Messrs. H. A. Matear [F.], J. Woolfall, T. M. Reade [F.], T. W. Haigh, and J. W. Blakey [A.]; Meeting and Excursions Committee, Messrs. A. Culshaw [F.], T. Cook [F.], E. P. Hinde [A.], and F. E. Pearce Edwards [A.]; Students' Committee, Professor Simpson, Messrs. T. Harnett Harrison [F.], J. W. Blakey [A.], and Arnold Thorneley.

#### The Royal Institute of Ireland.

President, Mr. Thomas Drew [F.], R.H.A.; Hon. Secretary and Treasurer, Mr. Albert E. Murray [F.], A.R.H.A.; Council, Messrs. J. J. O'Callaghan, J. R. Carroll [F.], George C. Ashlin, R.H.A.; Charles Geoghegan, William M. Mitchell, R.H.A., Sir Thomas N. Deane, R.H.A., R. C. Millar [F.], J. H. Pentland [F.], C. McCarthy, and W. K. Parry; Auditors, Messrs. Fred. Batchelor and R. C. Orpen.

#### The Cardiff, S. Wales, and Monmouthshire Society.

President, Mr. E. M. Bruce Vaughan [F.]; Hon. Secretaries, Messrs. J. Coates Carter and J. H. Phillips; Hon. Assistant Secretary, Mr. C. L. Wilson.

PRESENTATION OF THE ROYAL GOLD MEDAL TO MR. ERNEST GEORGE, *F.*AT THE SIXTEENTH GENERAL MEETING, MONDAY 22<sup>ND</sup> JUNE 1896.

ADDRESS BY THE PRESIDENT, PROFESSOR AITCHISON, A.R.A.

BROTHER ARCHITECTS, LADIES, AND GENTLEMEN,—

**T**HE first two public duties I have to perform since you did me the honour of electing me as your President are both agreeable. The first is to thank, in your name, the past President, Mr. Penrose, whom we may appropriately call “Athenian,” for the dignity he has added to the office, and for the great aid he has given to the Institute. There is no civilised country in which his name would not be received with acclamation, not only for his talents and learning, but for having settled for all time the optical refinements employed by the Athenian architects. My next duty is no less pleasant, for it is that of presenting, in your name, the Gold Medal of Her Majesty the Queen to Mr. Ernest George.

This Gold Medal evening is always delightful, for it not only honours one of our craft, but it reminds us all of the gracious interest Her Majesty takes in the fine art we cultivate and profess. The Sovereign is necessarily proud of those enduring monuments raised during her reign, that give fame and dignity to the country she governs, and whose style will bear her name. But with that largeness of mind that so distinguishes her, the gift of this Medal is not confined to the distinguished architects of her own country, but to those of the world; and her benevolence does not even stop here, for she bestows it also on those who have aided our art by their investigations, their researches, or their eloquence.

It is no small honour to be nominated by our brother architects to take a place in that roll of fame in which, to exclude the living, the names of Hittorff, Lesueur, Viollet-Le-Duc, Von Klenze, Lepsius, Von Ferstel, Von Schmidt, Von Hansen, Louis Duc, Cockerell, Barry, Scott, Pennethorne, and Street are emblazoned, not to speak of Willis, Fergusson, Schliemann, and César Daly. We are too apt to think that building alone counts, forgetting Horace’s maxim:

Many, many have lived, who were valiant in fight,  
Before Agamemnon; but all have gone down,  
Unwept and unknown, in the darkness of night,  
For lack of a poet to hymn their renown.

Had it not been for Vitruvius, how many of the architects of Greek buildings would be unknown! We have still the great Pantheon of Rome, but the name of its architect is lost; and were it not that Rabirius<sup>1</sup> was a friend of Martial’s, we should not know the name of the architect of Domitian’s palace. How many of the great Romanesque and Gothic buildings were built by nameless architects! We do not even know the name of the architect of so late a building as the cathedral of Seville.

To so modest and retiring a man as Mr. Ernest George, whose practical motto is “deeds not words,” my silence about his works would have been more agreeable. But the reason of your choice has to be given to our brother architects abroad, to whom the name

<sup>1</sup> Martial, *Epig.*, lib. vii. 55.



of Ernest George is not a household word, and whose eyes are not continually feasted with his works.

He was articled to Mr. S. Hewitt, of Buckingham Street, Adelphi, in 1856; and on Mr. Hewitt's premature death, he went for a few months into Mr. Boulnois' office. He became a student at the Royal Academy when he was nineteen, and at twenty he carried off the Royal Academy Gold Medal. At twenty-two he began practice with Mr. Thos. Vaughan, and continued for ten years until his partner's death; and among the works of this time Rousdon, in Devonshire, was built for Sir Henry Peck, as well as No. 36, Piccadilly, for Messrs. Sotheran. He was then joined by Mr. Harold Peto, and it was during this partnership that many of his important works were done. For the last three years, since Mr. Peto retired through ill-health, he has been joined by Mr. Yeates.

Mr. Ernest George's work has been almost wholly domestic: he has been engaged on no public buildings, and his church work has been confined to a few small churches, two of them in the Engadine.

He has been a most diligent etcher and water-colour artist, and has illustrated his travels and studies in Flanders, Italy, and France with the needle; it is not therefore to be wondered at that so many of his executed works have a quaint flavour of French, Flemish, and Italian work, as well as of old English. To give a list of his works would be like Homer's catalogue of the Greek fleet at Troy, but the following are some of the most important:—Rousdon, Devonshire, with its cottages, farm-buildings, church, and schools; Buchan Hill, Sussex, drawings of whose staircase are on the walls; Stoodleigh Court, Tiverton; Mr. Mitford's house, Batsford Park, Gloucester, as well as the Town Hall, at Moreton-on-Marsh, he had built in memory of Lord Redesdale; Dunley House, Dorking; Rawdon House, Herts; Shiplake Court, on the Thames, illustrated by a drawing; Motcombe, Dorset, for Lord Stalbridge; Glencot, near Wells; East Court, Ramsgate; the Coffee Tavern, Newark, on the scale of a town-hall; additions to North Mymms and to West Dean, Chichester, and his works in London.

Although I am only the spokesman of the Institute, I thought the members might expect me to say something on my own account of the works of Mr. George. I am not sure whether it was his design at the Royal Academy for the Duke of Wellington, or Sotheran's shop in Piccadilly, that first drew my attention to the originality of his work; now every architect who has visited Cheapside knows Cow, Hill & Co.'s shop, and no private building in London is better known than his Albemarle Hotel, or his shop of Goode's in South Audley Street; while whole quarters of London, such as Mount Street, Collingham and Harrington Gardens, and parts of Bayswater and Chelsea, owe their picturesque charms to his hand. I may here mention a terra-cotta-fronted house at Palace Court, Bayswater, whose elegant simplicity is worthy of all praise. Through his kindness I have been allowed to see the inside of Mr. Salting's house in Berkeley Square, and of Mr. De La Rue's in Cadogan Square, which exhibit the same originality as the outsides, and greater elaboration, even to the locks and hinges. Mr. Salting's house is palatial, the hall and staircase having monolithic columns of flowered marble, while the hall is lined with the same beautiful material, and there is a coffered ceiling of stone to the principal ground-floor room. Mr. De La Rue's house is on an irregular site, and is full of all the picturesqueness of Elizabethan, but with elegant instead of coarse carving. You pass under an open wooden staircase into the dining-room, and the drawing-room has an elaborate embossed plaster ceiling.

Although it is a great honour to be enrolled amongst this list of the great architects, architectural historians, and archaeologists of the latter half of the nineteenth century, this

choice of you, Sir, to take your place amongst them has been spontaneous ; for you are looked upon as the one who has been most instrumental in helping modern London to become one of the most picturesque cities in the world. I now beg, in the name of your brother architects, to hand you the Royal Gold Medal, with the hope that you may live long and happily to enjoy the distinction it confers.

### MR. ERNEST GEORGE'S REPLY.

MR. PRESIDENT AND FELLOW CRAFTSMEN,—

IT is with pride and gratification that I find myself elected to the honours of the Royal Gold Medal, which has been received in times past by many distinguished men. To me the charm of this medal is that, with Her Majesty's gracious sanction, it is the gift of one's brother artists, and it is by these one would always wish to be judged. I gratefully accept the compliment as a mark of your kindly feeling, and of your willingness to judge leniently, recognising perhaps the good intention, rather than the imperfect result which all workers are conscious of. I thank you personally, Professor Aitchison, as you newly take that chair, adding to the list of our courteous Presidents, that you, an accomplished critic and expert in house building, should have found such kind things to say about me, almost seeming to justify the award that has been made.

I am elected on the ground of my "executed works," and this gives me the opportunity to acknowledge the share that others have had in my works ; also the pleasure and help I have found in partnerships. My good friend Alfred Yeates has been my companion for the last three years ; and for fifteen years prior to that time Harold Peto was my very able colleague. He was not a draughtsman, but he had all the feeling of an artist ; and to his originality of thought, soundness of judgment, and refinement of taste he added also a capacity for the conduct of affairs that cannot be divorced from the practice of our craft, with its many sides. I feel that I have had a "good time," and have been allowed to work quietly, sheltered from many of the worries that disturb single-handed men.

My first good partner, Thomas Vaughan, who began with me when we were fellow students of the Royal Academy, received the Soane Medallion and Travelling Studentship of the Royal Institute. I feel how valuable is the work of the Institute in stimulating competition for prizes—and valuable prizes—that give the student means of travel and of study, with leisure from draughtsmen's work. There are objections to competition, but without it the greatest effort is seldom called forth, and the number of competitors for our prizes is a proof that the rewards are valued. I may assure our young men and competitors that infinite trouble is taken to decide justly and fairly in these competitions, although it is often impossible to prove which of two designs is distinctly the better, with the various merits and faults of each. To my young friends I strongly commend this struggle for prizes—although, Mr. President, I am delighted to accept my Medal without having to work for it.

It is my sincere hope that most of my friends in this room feel with me that ours is perhaps the happiest of callings. We may not gain credit for great originality, and yet in each essay there is an effort at invention and creation ; and there is the after pleasure of realising our schemes—however imperfect—on a nice, big scale ; a result so much more tangible than that enjoyed by the painter, or even the sculptor.

These latter, however, are wholly responsible for their works, and may do what they please ; whereas, with ourselves, in our works, especially in house building, there is the very important factor of the client—he who pays for the house and is to live in it, and must in fairness be allowed his part in the scheming of it. If there are points in which his wishes



differ widely from our own, a compromise is probably made ; but we cannot record on our building that this or that treatment was not in accord with our judgment, but was a concession to the wishes of the owner. I suppose we have all known the distress of revising a scheme to its detriment, and having to do that which we knew to be second-best. Yet the client, who may come with prejudices, is generally kind and considerate, and is willing to be led by fair argument.

How dull and monotonous our buildings would be if they were all turned out to our own fancy, and if there were no client, with his distinct wants and wishes, to help in the shaping of them, imparting some individuality to each work ! His wants should have the most careful consideration, even when at first they seem opposed to our own views of what is best. He should have his voice in the arrangement, and in the choice of style and treatment ; but he should be wiser than to worry his architect in matters of purely architectural detail. I have spoken of the client in the masculine, but we find that women are among the most enterprising or intelligent of builders, and their judgment, sense of fitness, and refinement of taste are often most helpful to the architect.

Among the pleasantest times that come to us I would count the visits to works when finished, if there are no smoky chimneys. To enjoy hospitality in a house of our own making, to shut our eyes to the points that might have been better, and to hear kind things said about our efforts, is gratifying to our vanity, and is a small compensation for the many experiences that make self-laudation impossible.

With those of us who enjoy doing our own work, not employing “ghosts,” we make plans, elevations, and details, and draw our full-size mouldings—probably doing everything that we think interesting. Yet, for the efficient working of the whole scheme, how much depends on those who in the “draughtsman’s office” carefully elaborate the plans of footings, plans of roofs, the direction of flues, the exact spacing of stairs, and innumerable details (many of them not interesting), but on which the comfort of the house so largely depends ! After a fair term of practice it is a pleasure to think of the many able young men of the past and present who have been associated with us. It is gratifying, too, to find how many are already our rivals, getting work to do on their own account, and doing it well.

Our occupation is a handicraft, the hand and the eye working together with, we hope, some assistance from the head ; and I believe there is more fascination about such work than about that which is purely intellectual. I should be sorry if an architectural union could forbid our working beyond seven hours a day. We have good professional excuses for happy holidays, and I have always felt that to leave one’s drawing-board and see two or three marble cities in Italian sunshine, or to look on the big brick towers of a Hans town, was profitable and refreshing, and some safeguard against monotonous production.

In art I believe strongly in the advantage of youth, with its power and freshness. I have long ceased to be young, but I endeavour to believe that in our branch of art, architecture, an increase of experience means increased knowledge and a sounder judgment, and these should be a help to the designer. I persuade myself that an architect need not become effete at an early age, and that he may keep to his work while his hand retains its cunning.

To the Royal Institute of British Architects I wish prosperity and strength, and a record to be accomplished of useful work done quietly for the good of the fraternity.

For most of my life I have been a member of the Institute, but I have never trespassed upon its time before, and I am not likely to do so again ; so I beg your kind forbearance now. Mr. President and my brother architects, I give you my very hearty thanks for the honour you have been pleased to do me to-night.



9, CONDUIT STREET, LONDON, W., 25th June 1896.

## CHRONICLE.

### THE SIXTEENTH GENERAL MEETING.

#### The Royal Gold Medal.

At the Meeting of Monday, the 22nd inst., which was very fully attended, and graced by the presence of several ladies, a hearty reception greeted the new President, Professor Aitchison, A.R.A., who was formally inducted, and invested with the insignia of office by the ex-President, Mr. Penrose, F.R.S. The President's Address on the presentation of the Royal Gold Medal to Mr. Ernest George, and the Reply of the recipient, evoked the most cordial demonstrations of approval from the Meeting. The interest of the proceedings was further enhanced by the exhibition in the Meeting-room of a representative collection of autograph perspectives of the Gold Medallist's executed works, together with several of his water-colour sketches. Among the former were included views of Batsford Park, Moreton-in-Marsh; Buchan Hill, Sussex; West Dean, Chichester; Poles, Ware, Herts; North Mymms Park, Hatfield; Motcombe, Shaftesbury, Dorset; Shiplake Court on Thames, near Henley; Stoodleigh Court, Devon; Houses at Ascot; Eastcourt, Ramsgate; Ossington Coffee Tavern, Newark; Tarasp Church, in the Engadine; Houses in Harrington Gardens and Collingham Gardens, S.W.; No. 47, Berkeley Square, W.; Albemarle Hotel, Piccadilly, and Houses in Cadogan Square. The water-colours comprised interior views of the Cathedral, Münster, the Madeleine, Troyes, and St. Lawrence, Nuremberg; and various sketches in Hamburg, Milan, Naples, Venice, Tangier, Algiers, Constantine, Tunis, &c.

#### Drawings, Prints, &c., in the Institute Collection.

At the same Meeting was exhibited a selection of Drawings, Prints, and Photographs forming part of the Institute Collection. Mr. A. S. Flower [A.], M.A., F.S.A., in introducing the drawings to the notice of the Meeting, observed that it had been suggested to the Literature Committee that the treasures hidden away in the bookcases and drawers of the Library were not sufficiently known and appreciated by members and students. A

sub-Committee\* had therefore been appointed in the autumn of last year to inspect and report upon the drawings, with a view to their proper arrangement and to making them more accessible and useful. The sub-Committee had devoted a great deal of time to the matter; the whole collection had been examined, and a considerable number of the drawings and prints had been cleaned and mounted for exhibition. Those hung on the walls by no means represented all the treasures the Institute possessed; they had been merely selected to show what there was in the Library for the use and interest of those who would take the trouble to inspect them. Mr. Flower then proceeded with a general description of the various exhibits, of which the following is a complete list:—

WREN, SIR CHRISTOPHER.—Greenwich Hospital: Dome. Original drawing.

Greenwich Hospital: general view. Engraving.

Bow Church: steeple, showing proposed portico to eastward. Engraving.

St. Paul's Cathedral: interior and choir (1713). Engraving.

St. Paul's Cathedral: first design, drawn from model by E. C. Sayer.

— and EVELYN, JOHN.—Plans for rebuilding London.

JONES, INIGO.—York Stairs (4 sheets). Measured drawings.

ADAM, ROBERT.—Admiralty Screen. Engraving.

CHAMBERS, SIR WILLIAM.—Somerset House: details (4 sheets). Original drawing.

Design for Mausoleum, &c. (7 sheets). Original drawing.

Capital of the Order of the Temple of Solomon. Original drawing.

MANGIN, —.—Restoration of Choir of Old St. Paul's, after Hollar. Drawing.

BILLINGS, R. W.—St. Paul's Cathedral: Whispering Gallery. Pencil Sketch.

London Churches (6 sheets). Original drawing (sepia).

CARTER, JOHN.—Scenes from English History, details chiefly from Westminster (4 sheets). Original drawings (water-colour).

MIDDLETON, CHARLES.—Westminster Hall: exterior view (1808). Coloured engraving.

HAWKINS, GEORGE.—Henry VII.'s Chapel: exterior view as restored 1813. Engraving.

AUSTIN, H.—Westminster Abbey: bird's-eye view from S.E., showing adjacent houses removed. Lithograph.

COCKERELL, C. R., and ELMES, H. L.—The Jesuit Church, Munich. Portfolio of original drawings.

ELMES, H. L.—St. George's Hall, Liverpool. Original drawing.

Design for Assize Courts, Liverpool.

DONALDSON, T. L.—Design for Hall of Science (1863). Original drawing (water-colour).

BURTON, DECIMUS.—Classic ornament (6 sheets). Original drawings.

Indian Ornament (4 sheets). Original drawings.

HARDWICK, PHILIP.—Hampton Court: Great Hall. Measured drawings.

Hampton Court: various views, &c. Original drawings.

MOCATTA, DAVID.—Genoa: Palaces. Measured drawings.

Venice: Churches (11 sheets). Measured drawings.

HADFIELD, —, and COLONNA, —.—Preneste, &c., 1791: 4 views. Original drawings.

VASI, GIUSEPPE.—General view of Rome, 1765. Engraving.

NOBLE, J.—Roman Forum: restoration. Etching.

\* Mr. Alex. Graham [F.], Chairman of the Literature Standing Committee; Mr. Sydney Smirke [F.], Col. Pendergast [H.A.], and Mr. A. S. Flower [A.], Hon. Secretary.



- ASHPITEL, ARTHUR.—Rome as it is, and Rome as it was (2 sheets). Chromo-lithographs.
- FALKENER, EDWARD.—Roman Villa restored. Original drawing.
- ANON.—Chapiteaux Ionique du Collège Romain. Original drawing.
- BARLOW, H. C.—“Symbolism.” Several original drawings.
- ANON.—Temple at Segesta, details. Original drawing.
- DE VOGÜÉ, COUNT MELCHIOR.—Three Early Christian Churches in Syria: Tourmanin, Kalb-Lonzeh, and Shakka-Houaran. Diagrams (water-colour).
- CANOVA, ANTONIO.—Monument to Pope Clement XIV. Engraving.
- CARDELLI, DOMENICO.—Monument to Princess of Saxony. Engraving.
- JONES, OWEN.—Court of Lions, Alhambra: entrance. Original drawing (water-colour).
- BELANGER, —.—Pavillon des Bains, Hôtel de Brancas, Paris. Original drawing.
- LE BRUN, C.—Versailles: ceilings (2 sheets). Engravings.
- ROELANDT, L.—Saint-Bavon, Ghent: metal-work (4 sheets). Original drawings.
- LEE, ERNEST C.—Canterbury, Trinity Chapel (2 sheets). Original drawings.
- SAYER, E. C.—Sandringham: entrance hall. Perspective in pencil.
- WILSON, F. R.—Brenckburn Priory. Measured drawings.
- FOWLER, W.—Old English Stained Glass (5 sheets). Engravings (hand-coloured).
- Old Flemish Stained Glass at Castle Howard (2 sheets). Engravings (hand-coloured).
- ANON.—St. Mary Magdalen, Taunton: elevation of tower. Original drawing.
- MARSHALL, J. A.—Design for Groining of Apse. Tracing from original drawing.
- ANON.—Brass for John Britton, Salisbury Cathedral. Rubbing.
- ANON.—Brass for George Basevi. Rubbing.
- VARIOUS ARTISTS.—Roman Mosaic Pavements, mostly found in England. Portfolio of drawings and prints.
- ANON.—Notre-Dame, Paris; Amiens; Rheims; Siena; Saint-Pierre, Caen; House of Pansa, Pompeii. Enlarged photographs.
- BALE, Major J. E., R.E.—Old Buildings at Cape Coast Castle (4 sheets). Original drawings (water-colour).

Among the drawings, &c., laid on the tables were a miscellaneous collection of original works by J. M. Lockyer (1846–47) and D. Mocatta, bound up in one volume, and a volume of Examples of Inlay Decorations in Glass, Marble, &c., selected from the churches, museums, and palaces of Italy, &c., by J. M. Lockyer.

#### The Standing Committees 1896–97.

The Council, acting under the provisions of By-law 46, have appointed five members respectively to the four Standing Committees, viz.:—*Art Committee*: Messrs. William Samuel Weatherley and William Young [Fellows], and Messrs. L. Alma Tadema, R.A., Alfred Gilbert, R.A., and W. B. Richmond, R.A. [Hon. Associates]. *Literature Committee*: Professor Baldwin Brown, M.A., Messrs. J. D. Grace and R. F. Grantham, Dr. A. S. Murray, and Colonel Prendergast [Hon. Associates]. *Practice Committee*: Messrs. James Brooks, W. D. Caröe, M.A., F.S.A., Thomas Harris, A. H. Kersey, and Ed. W. Mountford [Fellows]. *Science Committee*: Messrs. John

Slater [Fellow] and William H. Atkin Berry [Associate], and Mr. H. F. Donaldson, M.Inst.C.E., Mr. Hugh Leonard, and Professor Unwin, F.R.S. [Hon. Associates]. The names of the members of the four Standing Committees elected by the Institute on the 8th inst. are given on pp. 462–63.

#### The Library: New Regulation re Hours of Closing.

On the recommendation of a Special Committee recently appointed by the Council to consider and report upon the administration of the Library, the Council have decided upon the following changes in respect of the hours of closing, the regulation to take effect immediately the Midsummer Examinations are over—that is to say, on and after the 6th prox. Henceforth, from the beginning of July until the 30th September the Library will close at 7 p.m., and from the 1st October until the first week in July at 8 p.m., instead of 9 p.m. all the year round, as heretofore. On Saturdays the existing hours will be maintained, and the Library will remain open until 6 o'clock. During four weeks of the month of August—in the present year from the 3rd to the 29th inclusive—the Reference Library will be closed altogether, but the Loan Library will be served between the hours of 12 noon and 2 p.m. daily.

#### The Brickwork Tests.

The members of the Science Standing Committee have now concluded a further set of experiments as to the strength of brickwork piers, both in lime mortar and in Portland cement, and of different ages. These were conducted on the same site as those referred to in the JOURNAL of the 2nd April, viz. on a vacant piece of ground in front of the Engineer's office at the West India Docks, and consisted of crushing some piers built about three months since in substitution for others of the first series, which were faulty. Then the remainder of those built last July and August were crushed. Copious notes were made of the compression and other indications of stress under the advancing pressures, and of the ultimate collapse of each pier, while numerous photographs were taken at every stage showing how and in what manner each pier failed. The large hydraulic press so generously lent by Sir William Arrol was again tested as to indicated and absolute pressure by Professor Unwin, F.R.S. Altogether the experiments were conducted under much more favourable conditions than those in December last, and tolerably exhaustive results have been ascertained. These will be carefully collated and compared, and will probably form the subject of consideration and discussion at an evening meeting early next Session.

Further experiments have been suggested, but the funds at the disposal of the Committee are now exhausted; indeed, had it not been for the liberal donation of Dr. Longstaff the present series would have resulted in a deficit. It is,

however, a pity that the advantages of the site and the magnificent testing machine at their disposal cannot be utilised by the Committee to a greater extent.

#### The late John Gethin [A.].

Mr. E. M. Bruce Vaughan, President of the Cardiff, South Wales, and Monmouthshire Society, sends the following note, dated 22nd June:—

By the appalling disaster off Ushant the Institute loses an Associate, and Cardiff a very promising practitioner, for among the passengers travelling home by the *Drummond Castle* was Mr. John Gethin\* with his wife and family (two children), a nurse, and friend. The body of Mr. Gethin was found on Friday, and buried the same day at Molène. Mr. Gethin, who was a partner of Mr. Wallis, and who threw up all his business engagements in September last to accompany his wife to the Cape for the benefit of her health, had a very promising career before him, and, in addition to a very extensive practice, held the appointment of architect to the Wenvoe estate, Lord Romilly's estate, and Lady Britton's estate.

John Gethin was born at Leominster in 1868, and was articled to Mr. R. Forrest, Lord Windsor's estate agent. After completing his articles he went to London, and entered some of the principal architects' offices there to gain experience. Returning to Cardiff about eight years ago, he entered into partnership with Mr. Sydenham Richards, who was then acting as architect under Mr. Forrest for the Jenner, Romilly, and Windsor estates at Barry Dock; and Messrs. Richards & Gethin had their offices in part of the Windsor Estate offices, Wetgate Street, Cardiff. Among the buildings designed by the firm were the Barry Dock Hotel, Lloyd's Bank, the Barry Dock Chambers, a suite of offices for the Barry Railway Company, the Board of Trade offices, Post Office, dockmaster's residence, Culley's Hotel, the Ship Hotel, St. Mary's Church, and numerous villas and residences at Barry Dock. Mr. Gethin married the second daughter of Mr. T. R. Thompson, one of the directors of the Barry Dock and Railway Company.

Mr. Gethin, who was elected an Associate of the Institute in 1889, was also a member of the Allied Society at Cardiff.

#### The Sanitary Institute Congress.

The Autumn Congress and Exhibition of the Sanitary Institute will be held this year at Newcastle-upon-Tyne, from the 2nd to the 9th September. An influential committee, presided over by the Mayor of Newcastle, has charge of the arrangements, and the Exhibition will be opened by the Duke of Cambridge, President of the Sani-

tary Institute. The Exhibition will embrace all matters relating to public health and the prevention of disease, including sanitary apparatus, and various appliances connected with municipal work. The business of the Congress will be divided into three sections—namely, Sanitary Science and Preventive Medicine; Engineering and Architecture; Chemistry, Meteorology, and Geology. Special conferences will also be arranged for port sanitary authorities, medical officers of health, municipal and county engineers, sanitary inspectors, and others.

#### Architects' Benevolent Society.

The attention of members of the Institute is invited to the Red Book of the Architects' Benevolent Society, which contains its Council's Annual Report, the annual statement of the Society's accounts, and a list of its members revised to date. Since the names of those who responded to Mr. Penrose's recent appeal were given in the JOURNAL [see p. 388], the following contributions have been received: Professor Aitchison, A.R.A., £10. 10s.; Mrs. C. E. Barlow, "In Memory," £20; Mr. Thomas Blashill, £2. 2s.; Mr. Alfred Culshaw, £10. 10s.; Mr. Chester Foulsham, £2. 2s.; Mr. Geo. Inskipp, £5. 5s.; Mr. J. M. Kennard, £1. 1s.; and Mr. John Taylor, C.B., £2. 2s. Mr. Percy Hunter has increased his annual subscription to £2. 2s. Reference to the Society's Income Account of last year shows that although the sum of £674 was distributed in relief to applicants, the amount received in subscriptions was only £413. 17s. 6d. The Honorary Treasurer (Mr. Arthur Cates), in drawing attention to this fact at the General Meeting, expressed a hope that the annual subscriptions might be increased to the amount thus distributed in relief—a hope that has not yet been realised. The good work done by the Architects' Benevolent Society is commended to the attention of members of the Institute, whose interest and support it so thoroughly deserves, and the accession of new annual subscribers is earnestly desired.

#### Books received from Publishers.

*A Treatise on the Law of Easements* By John Leybourn Goddard, of the Middle Temple, Esquire, Barrister-at-Law. Fifth edition. La. 8o. Lond. 1896. [Messrs. Stevens & Sons, Ltd., 119-120, Chancery Lane.]

*Lumley's Public Health*, containing the Public Health Acts, and all Statutes in any way relating to or concerning the Duties and Liabilities of Sanitary Authorities. Fifth edition. By Alex. Macmorran, Q.C., and S. G. Lushington, M.A., B.C.L., of the Inner Temple, Barrister-at-Law. 2 vols. la. 8o. Lond. 1896. [Messrs. Shaw & Sons, Fetter Lane, E.C.]

#### Additions to the Library.

The Secretary of the Public Works Department of the Government of the Punjab has forwarded a report, by Mr. C. J. Rodgers, Honorary Numismatist to the Government of India, on the Sangla Tibba, in the Gujranwala District, in connection

\* *The Times* of the 23rd inst., in its revised list of passengers by the *Drummond Castle*, gives the name as "Mr. John Gethen (or Gethim)."



with the question of quarrying that hill for the purpose of supplying ballast for the Wazirabad-Lyallpur Railway.

The *Progress Report* of the Archæological Survey of Western India for the months 1894 to August 1895, and containing a map of H.H. the Nizam's dominions, has been received from the India Office.

The Lieutenant-Governor of Bengal has forwarded a *List of Ancient Monuments in Bengal*. The first list of objects of antiquarian interest in the Lower Provinces of Bengal was printed in 1879; a second and revised list was published in 1887; and as the progress of archæological research has disclosed since then new objects of interest, the publication of the present volume, corrected to 31st August 1895, has been found necessary.

*Suggestions in Architectural Design*, by John Cotton [F.], has been received from the author [London: B. T. Batsford]. Mr. Cotton, who here presents a hundred and one designs—the plates being drawn in lithographic ink by himself for direct transference to the stones—prefaces his illustrations with some "Thoughts on Architectural Progress."

*The Theory of Storiatio in Applied Art*, a lecture delivered before the Applied Art section of the Society of Arts on the 24th January 1893 by Hugh Stannus [F.], has been presented by the author. The pamphlet has reached a second edition.

*Rambling Sketches from the Old Churches in the Diocese of Llandaff*, by Charles B. Fowler [F.], contains a large number of sketches and measured drawings, the results of the author's visits to about sixty of the ancient churches in the diocese during the past seven years: the illustrations, which have been produced direct from the originals by photo-lithography, are accompanied by useful letterpress descriptions. A map of the diocese is also appended, giving the position of the churches, the nearest railway stations thereto, and the main roads [Cardiff: The Western Mail, Ltd.].

The American Institute of Architects has forwarded the *Proceedings* of its twenty-ninth Annual Convention, held in the St. Nicholas' Hotel, St. Louis, on October 15th, 16th, and 17th of last year. The following is a list of the Papers which were read on the occasion:—

Co-operation *versus* Competition, by Normand S. Patton (p. 48).

Suggestions by which a Greater Influence may be exercised by the American Institute of Architects among the Architects of the South-West, and for the Elevation of the Profession before the Public, by James B. Cook (p. 54).

Prevention of Staining of Plastering on Damp Walls and Fire-proofed Surfaces, by Louis de Coppet Berg (p. 90).

The Woods of Washington as Building Material, by George W. Bullard (p. 98).

Preliminary Conclusions drawn from the United States Timber Tests, by Prof. J. B. Johnson (p. 154).

The Rational Design of Fitched Beams, by Prof. J. B. Johnson (p. 112).

Nos. 2-5 of the new monthly, *Architecture*, presented by the Editor, contain, among others, the following articles:—"Renaissance in England," by J. A. Gotch [F.]; "Furniture and Joinery," by E. Guy Dawber [A.], illustrated by the author; "Scottish Domestic Architecture of the Sixteenth and Seventeenth Centuries," by A. N. Paterson [A.], M.A., also illustrated by the author; "Robert Adam and his System," by Percy Fitzgerald, &c.; and "The Royal Academy and Architecture," by Mr. R. Phené Spiers [F.].

## REVIEWS. XLIII.

(117)

### R. L. STEVENSON ON EDINBURGH.

*Edinburgh: Picturesque Notes by Robert Louis Stevenson, with illustrations by T. Hamilton Crawford, R.S.W. So., Lond. 1896, price 16s. net. [Messrs. Seeley & Co., Limited, 46-48, Essex Street, Strand.]*

Looking upon the Castle Rock, as one whose earliest recollections of note are the rejoicings in Edinburgh at the time of Her Majesty's accession, whose childhood was spent in that city, and whose first journey was travelled by canal between Port Hopetoun in Edinburgh and Port Dundas in Glasgow, Mr. Stevenson's book comes to me, as it will to many others, a bright memorial of the past. The mind accustomed to the scenes and the scenery so graphically described by him lingers over this book with pleasure, not unaccompanied with tender and regretful memories of life's gay morn and its brave company of joyous youth—now shrivelled into a veteran or two hirpling their last stage with as stout a heart as they can to that bourne of rest from which no traveller, dusty and worn and wearied with the journey of life, would desire to return. Short as the time is since Stevenson wrote his *Picturesque Notes*, the effacing fingers of improvement have been busy and the old North Bridge of Edinburgh of one's early memory will soon be a memory itself.

I do not think that it is out of place to supplement from an earlier epoch the brilliant pictures of Edinburgh so exquisitely painted by Stevenson, and by so doing evoke some notes of the period between Sir Walter Scott and Lord Cockburn and the author of the book under notice. The great whirl of life, so essentially literary and academic, which prevailed up to the end of the first of that period in Edinburgh and Scotland, was swept into the channels of politics and commerce by the Reform Bill of 1832 and the introduction of the railway system. The old Scottish Pan died when the first locomotive rolled through his solitudes, and when the patriarchal system received its quietus. But his influence is still seen in such books as this, singling out as it does the imperishable memories attached to places, and the indestructible natural beauties which defy the

touch of time or the mutilations of vandalism. To go from Slateford, beneath the Pentlands, to Portobello-by-the-Sea, with this book in one's hand, how vivid and how true the word-description is! It scarcely requires illustrations, although these are of a character more than usually suggestive and excellent.

Some of us can go back a little further, and remember when there was a populous rookery in St. Bernard's Crescent, and when the only railway was that from St. Leonards (dear to the memory of Jeanie Deans), with a rope-worked incline, and open carriages cannily trotted before by horses to Dalkeith, Fisher Row, and Portobello, with one carriage painted blue for "ladies only"—the ladies being the buxom matrons and slim damsels whose musical cry of "Caller ou" is heard no more.

In those days the noblemen of the East of Scotland had their town-houses in Edinburgh; those of the West frequented Glasgow; but now the great London maelstrom has, with some few exceptions, sucked them all up, to gyrate there in a comparatively useless assemblage of other aristocratic atoms, instead of living among their own people and in their native land for mutual happiness and good, as their forebears did. The very hills and straths and rivers, and the cities thick with ancestral memories, cry out for the old times, but will cry in vain: Edinburgh must remain a provincial town until the monarch holds high court at Holyrood, and Scottish men and maidens can bend before her in the ancient historical *House of Halyrude*, instead of the modern Buckingham Palace—a place which inspires no national sentiment whatever, either in the English, Scottish, or Irish mind.

There is a printed and published catalogue and description of all the known tombs and burials in the Old Greyfriars Churchyard, which catalogue contains not only a great deal of general historical matter, but of Scottish family history. Such a catalogue is sadly wanting for all the old parish churchyards and burial-places in Scotland. The late Mr. Guthrie Smith's daughters (Mugdock Castle) have done that duty for Strathblane, and no more interesting work could be found for the sons and daughters of the Church of Scotland.

Burke's coign of vantage at old Greyfriars, which the sexton pointed out to Stevenson, must have been a hired window for his special resurrectionist practices. His active place of business, in partnership with Hare, was in that western suburb of Edinburgh called Fountain-bridge, close to the Union Canal, upon which Hare plied his daily avocation. It was there that the weary wayfarer entering the city from the west was invited in "to rest," and was sent to rest indeed. I remember an old lady, now dead, who used to visit the poor at Fountain-bridge, and amongst others Mrs. Burke; and that

she told how on one occasion, just as she was leaving, Burke came in, was very civil, but offered to show her an easier and shorter way out by the back; whereupon, to her astonishment, Mrs. Burke seized her and pushed her out at the front, saying, "No! no! no!" There was found in Burke's back premises a mound of boots and shoes of all sorts and sizes, which were concluded to be those which had erst clad the feet of those who entered, but left not his fatal abode alive, and our friend considered that her shoes had very nearly been added to that cairn of crime.

There are one or two remarks in the book, as to villa-building, architects, and builders, which are not, perhaps, quite agreeable to the views of some, but which must commend themselves to the true architect and the conscientious builder. Many transgressions in architecture or building have been committed from ignorance or from imitation; but still the suburbs of Edinburgh, with all their faults, are so bright, and surrounded by such thick, luxuriant greenery, that the eye is pleased and the mind content indeed. Possibly, too, Stevenson's mind was full of old memories and scenes, and his sensitive nature lamented over the disappearance of old landmarks and old rurality. Certainly the passion of the Psalmist was strong within him, and we may hear him say in his exile from Edinburgh, "When I forget thee, O Jerusalem, may my right hand forget his cunning."

It is indeed a book to love.

Glasgow.

JAMES GRAHAME.

(118)

### RAMBLES IN ROME AND POMPEII.

*Rome and Pompeii: Archaeological Rambles. By Gaston Boissier, of the French Academy. Translated by D. Havelock Fisher. With Maps and Plans. 8o. Lond. 1896. Price £6. 6s. net. [T. Fisher Unwin, Paternoster Square.]*

In a review of this book its subsidiary title must be well kept in mind. We must let the author take us by the hand, so to speak, and be our guide through the ruins of the past. By the aid of his antiquarian and literary researches we may restore each fallen fragment to its architectural and historical position, and realise the expression of the old poet of the Renaissance, that ancient Rome though dead yet lives and speaks through the succeeding centuries.

In our first ramble through the Forum (that old battlefield of archaeologists) we are enabled, thanks to the excavations and explorations of the last twelve years or more, to see the heart and centre of Rome from Romulus to the Re Umberto laid bare and exposed before us. By the events of 1870 United Italy had contracted a debt to the past which it set about paying as soon as the new government was installed in Rome. As early as November 1870 Pietro Rosa, the skilled explorer of the Palatine, was appointed Superintendent of



excavations, and work in the Forum was at once commenced under his direction. Shortly afterwards Italy bought back the Palatine from Napoleon III. while he was still a prisoner in Germany, and thus the area from the Arch of Titus to the Capitoline Hill was able to be fully explored.

No detailed account of the works has been preserved by the Roman administration; but a young pensionnaire of the French School of Rome, M. Ferdinand Dutert, closely followed the workmen, and he eventually published a work on the Forum containing plans which have been reproduced in this volume. One in particular gives the state of the Forum as it then was, and another elaborately worked out shows the Forum at the time of the Emperors. It is with the aid of these plans that our author personally conducts us in his first ramble. In a very interesting manner we are led over the old flagstones of the Via Sacra, for a whole century the subject of endless disputes among archaeologists. That this was so is not to be wondered at, since Varro and Festus inform us that in their time "the multitudes were not very "sure which road they ought to call the Via Sacra." Now we know this road perfectly well, and can traverse it in its whole length, thanks to the efforts of the excavators.

Before our guide has conducted us very far, we find ourselves as critics not quite at one with our leader. We have come to where we find, or think we find, the remains of three buildings of the primitive age which Time had spared until the days of the Empire, viz. the Temple of Vesta, the Regia, and the Atrium Vestæ.

On the map of the Forum as it still remains according to M. Boissier, we see clearly the site of the Temple of Vesta, and the very extensive ruins of the Atrium Vestæ; and on the plan of the restored Forum by M. Dutert we see a most ingenious and symmetrical disposition of these two buildings as they would be if devised by a modern mind steeped in classical lore. But we are struck by the absence of the Regia on both these plans; nor can we find any reference either in text or plans to the Domus Publica, or house of the Pontifex Maximus, which we know by the words of Suetonius to have been near to the Via Sacra, and to have been the house which Julius Cæsar inhabited after his removal from the Subura.

In regard to the Regia, which was the Fanum, or sanctuary and public office of the Pontifex, we are told in the text that it "still remains to be "discovered," and our author adds: "Must we "believe with Signor Lanciani that the Regia "disappeared long before the ruin of the Empire, "or must we think with M. Jordan that it will be "found under the church of Santa Maria Liberatrice? The future alone can say."

At this point we are seized with the idea that the mysterious future of our author's time has

already said some years ago all that is likely to be known upon this question, although Santa Maria Liberatrice still remains undisturbed; and the elaborately symmetrical dispositions of M. Dutert on which our author relies are quite upset by the diagonal lines of the ancient roads skirting the Temple of Vesta and the adjacent buildings now laid bare before us.

We look for the date on the title page of this volume, and find that of the English translation, by Mr. Havelock Fisher, is given as 1896, but we do not find the date of the original work. We therefore charitably conclude that M. Boissier's book must have been published antecedent to 1886 or 1887. For in these years Mr. F. M. Nichols and Professor F. Jordan will be found to have given a full account of the discovery of the remains of these buildings, and to have described most minutely and convincingly the purposes and history of the remains yet left to us of these four most interesting of the more recently discovered structures.\* An excellent series of plans is also to be found in Baedeker's *Handbook to Central Italy* (1890). For an altogether accurate and up-to-date description of the Forum we must therefore go to some other and later source than M. Boissier's volume. Such we find in the *Remains of Ancient Rome* (1892), by the late Dr. Middleton, where, in the excellent plan of the Forum and the full and exhaustive description in the letterpress, these vexed questions and knotty problems are provided with the key to open and the lamp to illumine the dim and misty dungeons of the past, and bring into the clear light of the Roman day the mysteries of the Vestals for the gaze of every student who traverses the basalt causeways of the ancient city.

Still, if archæologically M. Boissier be a little behind the most recent discoveries, we confess that, with his national charm of style and his happy references to the literature of the time and the life of the people, we prefer him as a guide to the far more complete but somewhat frigid descriptions of the English professor, and we shall proceed with him with undiminished pleasure to examine the three sides of the Forum and the magnificent buildings surrounding it. The side to the east is still covered by a quarter of New Rome, and it may be long before the work of discovery is perfected. Curiously enough, the poet Statius, in an adulatory series of verses to the Emperor Domitian on the erection of a colossal statue in his honour, enumerates the buildings round about the Forum, placing the Basilica of Æmilius on this eastern side. On the two bas-reliefs also discovered some years back near the column of Phocas, and alluded to by P'Anson in his Paper, to which reference has already

\* See Paper by Edward P'Anson, "The Recent Excavations of the Roman Forum" [TRANSACTIONS 1878-79, p. 201].

been made, we easily recognise the Temples of Castor and Saturn with the Basilica Julia on the western side; while on the eastern are represented the Æmilian Basilica and the Curia of Cæsar.

Those who remember the Farnese Gardens and the Gateway of Vignola, affording access to the French portion of the Palatine, may now be disappointed to see from the Forum a mass of stone and brick walls of unequal height and the framework of houses. But it is pointed out to us how little the ancients cared for the wide streets and open spaces that our modern towns seem to find indispensable. At the foot of the imperial palaces, crowding the house of the Vestals, we have a mass of houses creeping up the hill, encroaching on the two roads, the Nova Via and the Clivus Victoriæ, advancing little by little over the footway, until they almost meet: the top storeys are joined by arches thrown across the street from one roof to another. Upon these arches are built aerial rooms, so that the two streets became dark haunts for cut-throats. It was in such a street as this in Sylla's time that Sextus Roscius was killed as he was returning home from dinner.

The house of Caligula almost touched the other houses on the hill, while nothing separated the houses of Augustus and Tiberius from their neighbours. Portico was raised upon portico, staircases were erected, columns and statues encumbered the Forum, dense crowds assembled to hear the orators and take part in the political assemblies, and filled the upper storeys of the basilicas. Thence they could see well, and, strictly speaking, they could hear too, for the voice of the orators, artificially trained and modulated, rose and filled the enclosed space of the Forum, situated in a hollow closely built in by high structures and surrounded by steep hills. A visitor of the present day, gazing on the desolate waste before him, can hardly imagine the effect produced on the mind of the ancient traveller who, entering Rome by the Flaminian Way, and passing through the Forums of Trajan, of Nerva, of Vespasian, of Augustus, and of Cæsar, reached at length the ancient Forum, whose splendours and monuments are brought before us by the pen of the nineteenth-century Academician.

From the Forum M. Boissier naturally takes us to the Palatine for our next ramble, and here, again, supplies us with a plan very inferior to that contained in the late Dr. Middleton's later work, though both are founded on the plan prepared by Signor C. L. Visconti and Professor Lanciani. A plan is also given showing a restoration by M. Dutert of the Palace of Domitian. Excavations disclosing the remains of this building were made by Bianchini about the commencement of the last century, but after despoiling them of any objects of interest the excavations were filled up and left until again explored by Signor Rosa. A

part of the site yet remains as private property. A restoration of the adjacent Stadium of Domitian is preserved in the Ecole des Beaux-Arts, Paris, the work of M. Pascal, the head of the studio of that name.

We notice in this portion of our ramble the soldiers' quarters, in which was found the famous caricature now in the Kircher Museum: "It represents a man with an ass's head stretched upon a cross; below a *parson*, roughly drawn, raises his hand to his mouth and gazes upon the crucified one." This is not the only example of careless editing, for on p. 124 we read of a strange scene enacted in the presence of *Caracalla*, and related by *Herodotus*!

From the remains of Pagan imperial grandeur we pass to the catacombs of the New Faith, with the history of the explorations by Signor J. B. Rossi. Reference is here made to the book of Messrs. Northcote & Brownlow, published in a translation by Alard in Paris in 1872, and entitled *Rome Souterraine*, in which are some suggestive considerations as to the Eastern origin of these subterranean cemeteries. We learn that a Jewish catacomb, anterior to Christianity, exists in the Trastevere, and that another is found on the Via Appia. From the time of the Antonines, disposal of the dead by burning became less and less frequent, and we accordingly find that the Christian burrowers of the ground came across ancient caves and vaults which were allowed to communicate freely with the tombs of the martyrs.

Other excursions take us beyond the walls of Rome. We pause on the way to Tivoli to visit Hadrian's Villa. These remains, long the property of the Braschi family, proved a rich mine whence some of the masterpieces in the museums of the world were extracted, and as early as the fifteenth century Pirro Ligorio endeavoured to bring order from the scattered fragments and construct a plan of the imperial dwelling. Piranesi, Canina, and Nibby followed, and later M. Daumet, the eminent Parisian architect, produced the best and most complete work on this building. Little of interest has since been discovered by subsequent intermittent explorations. A plan, as restored, is inserted in this volume.

It is interesting to note that in this villa and its surroundings we first find the modern spirit of a love of Nature and her more beautiful scenes having any practical influence on Roman life. Hadrian attached to certain parts of his villa and grounds the names of the most beautiful places he had visited. In some cases we can still trace the resemblance to the sites he indicated, such as the Vale of Tempe. A portico looking towards Rome (the Cento Camerelle) may also be identified with the Pœcile, founded on that described by Pausanias at Athens. We must not take these to be literal duplications, but rather as suggesting to his mind,



by their resemblance and development, scenes he had loved during his travels. A refined artist, a Greek in taste, he sat in his villa within view of Rome, surrounded by the Latin and Sabine Hills. "It is not only a landscape," says Pliny the Younger, "it is a picture." We may feel sure that those who knew so well how to choose the situation of a pleasure-house knew also how to love the country and to understand Nature.

Another ramble takes us through the lonely and melancholy plain to Ostia, and the deserted streets and ruined docks and warehouses of a forgotten city. Space forbids one to trace the contrasts between this city of industry and trade and the capital grandeur of the metropolis of the world. On the imported cereals received at Ostia the provisioning of Rome depended. Hence the great works in harbours, ports, and moles, which bear to this day the names of Claudius and of Trajan.

Our last ramble is to the world-famed city of Pompeii, which at first sight produces the effect of a new and improvised town, for all is of the same character and the same period. After the earthquake of A.D. 63 the reconstruction was commenced, and it was far advanced when, sixteen years later, it was covered up by the eruption from Vesuvius.

The town is now disclosed for perhaps some two thirds of its extent, and in the more recently exposed quarters examples of paintings, marbles, bronzes, and other articles are brought to light, similar in all respects to objects already collected and shown in the museums. It might therefrom be concluded that Pompeii as a mine of interest was about exhausted. Yet in 1875, in a well-hidden spot in a house of modest appearance, there was discovered a great novelty, viz. a Pompeian banker's account-books. Until this date neither waxen tablets, rolls of papyrus, books of parchment, nor archives of any kind had been found; although at Herculaneum a library was one of the earliest discoveries. We have thus reason to hope that in prosecuting these explorations yet more happy discoveries may be made.

The wall and fresco paintings afford our author material for an interesting chapter, though avowedly founded on Prof. Helbig's works on the subject, while the concluding chapters have special reference to the literary, civil, and domestic life of the inhabitants of the gay provincial city.

In conclusion one cannot help saying that the merit of this book is somewhat impaired by a carelessness in matters of detail, some instances of which have already been alluded to. Many inconsistencies exist as to the spelling of words, such as the Campo *Vacchino* instead of Vaccino, tribute instead of tribune. The Gate of Vignolius scarcely brings to our mind the Renaissance architect, Vignola; opus reticulatum, Hellig for Helbig, are other examples. Should a new

edition be issued it will be absolutely essential to revise the archaeological and topical portions, and bring them up to the present level of knowledge, if the book is to be seriously taken as a guide by the student or traveller. But, considered from the broader view of observers of the life, manners, customs, and architecture of the ancient Romans and Pompeians, it has much to interest and instruct the reader.

HENRY L. FLORENCE.

(119)

#### A NEW WORK OF REFERENCE.

*A Cyclopædia of Works of Architecture in Italy, Greece, and the Levant.* Edited by William P. P. Longfellow, Hon. Member and late Fellow of the American Institute of Architects. 4o. New York and London. 1895. Price 6s. [Charles Scribner's Sons, New York; T. Fisher Unwin, 11, Paternoster Buildings.]

The Preface states that "the purpose of this volume is to give a conspectus of the architecture of Italy, Greece, and the Levant, arranged for easy reference, which shall be sufficient for the general reader or the traveller, and at the same time furnish the student of architecture a fairly adequate account of the important monuments, and give him finger-posts for guidance in further investigation." The book is far too cumbersome to be used as a guide when travelling, and it could be consulted with greater convenience in a reference library if it had been divided into two volumes. It is illustrated by twelve full-page photogravures, which for some reason are distributed equally through the volume, are not referred to in the text, and on no occasion come near the article they are intended to illustrate. Thus, the Acropolis of Athens comes where Baalbek should have been placed; the choragic monument of Lysicrates between the pages of Constantinople; Baalbek in the middle of Florence; and so on all through the book. There are 256 illustrations in the text, of which only about thirty are plans, obviously too inadequate a representation of so important a feature, and the provision of which might have dispensed with some long descriptions, which without them it is difficult to follow. The descriptive text is preceded by a bibliography and a glossary of architectural terms, which are both of great value, so that the student who desires to take up any special subject will find at least the titles of the best works to consult, and the general reader or traveller can make himself acquainted with the technical terms used throughout the work.

An examination of the articles proves the text to be full of carefully compiled data, and, as a rule, clearly and systematically described; but the absence of references throughout is a serious blemish.

"The selection of examples," it states in the Preface, "has been a difficult work, and often a

"doubtful one." This will be more easily understood when it is pointed out that in order to bring Italy into the Cyclopædia it has been found necessary to include all the churches and palaces of the Revival; and the descriptions of the latter, alternating with those of ancient or mediæval remains, jar somewhat on the intellect, for it is impossible to dismiss altogether from one's mind the clear distinction which Fergusson draws between the true and the imitative styles. It is true that the "line of evolution" on which the author lays stress would have been lost if all Renaissance work had been omitted; but a compromise might have been arrived at if Italy had been placed in a separate volume.

Without in any way wishing to underrate the value of the descriptions given, the following criticisms have occurred to the writer when going through the work:—

(Page 10) No reference is made to the so-called Palace at Amman, an interesting and well-preserved building of the sixth century.\*

(Page 43) Credit should have been given to Mr. Penrose for the discovery that the Temple of Jupiter Olympius at Athens was octastyle, and not decastyle, as formerly supposed.†

(Page 63) A porch is shown in front of the polygonal church of San Stefano, Bologna. This does not exist; there is only a balustrade, and three or four steps down to the pavement in front of the entrance.

(Page 96) A description of the churches at Constantinople is certainly incomplete which does not include the church of Moné-tés-Choras,‡ now the Kahriyeh Djamisi, and known to travellers as the Mosaic Mosque.

(Page 118) No mention is made of the square pedestals found at Ephesus by Wood, the exact position of which has proved a fruitful theme amongst archaeologists.§

(Page 133) What is the authority for the original plan of Arnolphi's church, shown to have been smaller, and with a different spacing of the bays of the nave, than that which now exists?

(Page 230) No mention is made of the ninth-century basilica church of San Vincenzo in Prato,

Milan, one of the most perfect examples in North Italy.

(Page 310) Is it quite certain that the centre part of the basilica at Pompeii was roofed over? Arthur Ashpitel discovered in 1834 surface-water drains in the interior, which would not have been required had there been a roof. The existence of a step on which the columns rest is an additional proof of the hypæthral nature of the structure.

(Page 370) One of the æsthetic questions which troubled writers on the Pantheon was the incongruous nature of its parts. The juxtaposition of a classic portico to a circular building seemed opposed to common sense. This apparent incongruity was explained when M. Chedanne\* discovered that the circular portion was built by Hadrian, and that at a later date the portico of the three-celled rectangular temple (which occupied the site of the circular building) was raised to form the entrance, with some slight changes in its design. Mr. Longfellow brings us back to the same dilemma when he asserts (on what authority we know not) that the original temple was "a circular structure of essentially the same disposition as the present rotunda, but with a conical roof of wood, which was probably supported by an interior circular range of columns."

(Page 207) No reference is made to the Palace of Mashita in Moab, described and illustrated by Canon Tristram in 1873, and ascribed by Fergusson to Khosru Purviz, A.D. 620, though its detail suggests, as Mr. Lethaby has pointed out in *Sancta Sophia*, an earlier date, viz. that of Justinian.

(Page 506) The "bands of coloured marble edged with dog-tooth ornament" in the Fondaco dei Turchi are known to us as the Venetian dentil: it has, however, an earlier origin, being found in St. Sophia, and should be called the Byzantine dentil. The dog-tooth ornament is an Early-English Gothic decoration, which has no resemblance to the dentil string or band found in Venice.

(Page 520) "*The new church*"—speaking of the domed church of St. Mark—"appears to have been still again rebuilt" is a very meagre rendering of Cataneo's elaborate disquisition on the history of the development of St. Mark's, and it can only be supposed that Ongania's magnificent work, *La Basilica di San Marco in Venezia*, is one of those works referred to which is not represented in the United States libraries.

However, these are only minor points, perhaps, when one considers the immense labour entailed in preparing this Cyclopædia, and the evident pains which have been taken to make it a valuable work of reference.

R. PHENÉ SPIERS.

\* See Fergusson, vol. i. p. 407, 1893 edition. See also "Sassanian Architecture," by Mr. R. Phené Spiers [TRANSACTIONS, Vol. VII. N.S. p. 59].

† "The Temple of Jupiter Olympius," by Mr. F. C. Penrose [TRANSACTIONS, Vol. IV. N.S. p. 89].

‡ See Dr. Freshfield's addenda to Mr. Brindley's Paper on "Marble: its Uses as suggested by the Past" [TRANSACTIONS, Vol. III. N.S. p. 54].

§ See "The Temple of Diana at Ephesus," by J. T. Wood [TRANSACTIONS 1874-75, p. 135]; "The Temple of Diana at Ephesus, with especial reference to Mr. Wood's Discoveries of its Remains," by James Fergusson [TRANSACTIONS 1882-83, p. 147]; "Reply to Mr. Fergusson's Paper," by J. T. Wood [TRANSACTIONS 1883-84, p. 165]; "The Sculptured Columns of the Temple of Diana at Ephesus," by Dr. A. S. Murray [JOURNAL, Vol. III. 3rd Series, p. 41].

\* See Mr. Spiers's Summary of M. Chedanne's Report to the Académie des Beaux-Arts [JOURNAL, Vol. II. 3rd Series, p. 175].





THE OWEN JONES STUDENT 1895 :  
HIS NOTES AND IMPRESSIONS IN ITALY.\*

I decided to begin my tour in Sicily, having heard glowing accounts of the mosaics in the Norman churches there of the eleventh and twelfth centuries. The impression the beautiful Cappella Palatina at Palermo seemed to have produced on all who had seen it determined me to commence with it, and on 22nd March 1895 I left for Naples. But as I intended revisiting that city on the way north, and wished to begin work at Palermo without delay, I made no stay there, but left by the Florio Rubattino steamer on the evening of my arrival, and sailed into Palermo Bay at sunrise next morning.

The "Conca d'Oro," a valley so called from its resemblance to a shell, covered with perhaps the richest vegetation in the world, spreads itself out below a magnificent panorama of hill-tops to the water's edge, with the red roofs and white walls of Palermo sparkling in the sun in the foreground. On the right are the steep slopes of Monte Pellegrino, and stretching out to the left low hills, terminating in Cape Zeffrano with the rock of Cefalu in the distance, and the coast beyond stretching away in bays and promontories towards Messina.

Monreale is beautifully situated on the hills in the centre, with the monastery of San Martino on the summit of one of the highest peaks, altogether forming a scene which I think may well compare with the famous Bay of Naples.

*Palermo.*—The main part of the town is composed of a network of narrow streets, lanes, and alleys following the lines of the original Saracenic buildings. During the period of Spanish rule the Viceroy Marquis di Villena, in the year 1609, cut two straight and broad streets through the town, one extending from the sea to the Palazzo Reale on the landward side, and another at right angles to it from side to side of the town. Most of the buildings in these streets belong to the great period of the Spaniards, and with all their faults

of exaggeration, &c., have a very rich and massive effect from their great size.

At the crossing of these streets, called the "Quattro Canti," is a fine architectural treatment of the octagonal space formed by cutting off the angles of the buildings. Three orders of columns are carried round, with statues of the Seasons, several Spanish kings, and the Holy Virgin of Palermo, with some fine coats of arms introduced in panels in the upper order. There are four fine fountains and basins in the angles. The church of San Giuseppe de' Teatini occupies one of the corners, and the symmetry of the building has been preserved in a very ingenious manner. Leaving these two main streets, one finds oneself in a maze of entangled lanes composed mostly of uninteresting building, though there is seen here and there a fine Renaissance palace or church, and occasionally a charming bit of Gothic; but the uncleanness of the streets makes wandering about very unpleasant, and sketching almost impossible.

The Cappella Palatina was the private chapel of the Sicilian kings, and is situated in the centre of their Palazzo Reale, which occupies a fine site overlooking the town, in the Piazza Vittoria. It was built by Roger II., in the beginning of the twelfth century, and so far may be called a Norman building; but many of the features point to a strong Moorish element in the design, doubtless owing to the work being carried out largely by the lately conquered Saracens. This influence is chiefly evident in the roof of the nave, a piece of work which would not surprise one in a building of pure Moorish origin. The effect of this roof from below is wonderfully rich and intricate, and among its decorations Cufic inscriptions round the octagonal-domed compartments play an important part. The range of colours is large, and they are varied in the boldest manner, producing a dazzling effect; but in the gloom which usually prevails it seems a hazy mosaic of beautiful colour, lit up occasionally by the reflected sunlight from the windows on the south. This effect is no doubt partly owing to the centuries of incense smoke which has darkened the colours.

The curious stilted arches of the nave also proclaim their Eastern origin, and the fine marble lining of the walls, with its beautiful geometric borders and divisions and striking frieze.

The floor is of a kind almost universal in early Italian churches, viz. geometric designs in marble mosaics, with white marble borders, and porphyry slabs and circles; but here the workmanship is more than usually delicate, and the designs very beautiful and varied.

The pulpit is a beautiful piece of Byzantine work with geometric mosaics, and is now used as the organ-loft and musicians' gallery.

The mosaic pictures on the walls are closely allied in style to the Byzantine churches of Greece,

\* Abridged from the Student's Report.

to St. Mark's, Venice, and, I suppose, St. Sophia in Constantinople. Their splendid colour will at once strike an observer, but their composition and beautiful drawing become more apparent on closer study. In this respect I think the mosaics of the Cappella Palatina a triumph of the decorative art.

The Palazzo Reale contains several rooms decorated with mosaics of the same period, which I had only time to look at, but are very interesting as examples of domestic decoration of this date, and perhaps unique.

The Cathedral dates from about the year 1170, and owes its origin to the energy of an Englishman, "Walter of the Mill"; but his work has been nearly obliterated by subsequent alterations and additions, the most ruthless of which occurred about 1780, when the present dome was constructed and the interior generally disfigured beyond recognition by the Renaissance features then prevalent. In the west end of the south aisle are the "tombs of the kings," among them being the two emperors, Henry VI. and his illustrious son Frederic II. The great porphyry sarcophagi are very massive and simple, and over each, supported on columns of porphyry or inlaid with mosaic, is a fine canopy beautifully inlaid with mosaics on the ceiling. The church has been so thoroughly stripped during the successive "restorations" that little else of interest remains. There are, however, two beautifully carved holy-water stoups, with fine alto-relievs of Scriptural subjects; and beneath the dome may be seen a long diagonal line inlaid with brass. On either side at intervals are the signs of the zodiac inlaid with marbles in a very broad and effective manner. The sunlight admitted through a minute hole in one of the aisle domes strikes this line at mid-day, and by means of the zodiacal signs the months may be correctly told as well. There are several fine early Christian sarcophagi in the crypt.

The Museum contains the metopes from Selinus, examples of early Greek sculpture, and, what is perhaps more interesting from a decorative point of view, a large collection of painted panels and reredoses, dating from the twelfth to the seventeenth century, where the development of this style of painting from the early Byzantine types may be very well studied.

Besides these there are some splendid vestments, probably Spanish, and fine silver gilt and brass reliquaries, monstrances, &c.

As nearly all my time was given to the drawings of the Cappella Palatina I did little work elsewhere in Palermo, but could not resist making a drawing of the Porta Nuova, the western gateway of the town, and adjoining the Palazzo Reale. It is in what I suppose to be the Spanish Renaissance style of the sixteenth century, and is very bold and effective in treatment. The roof of tiles—blue, green, and rich yellow—with the eagle of

Aragon spreading over each face, forms a fine piece of colouring.

Most of the domes and towers of Palermo are roofed with tiles, and the effect is exceedingly good where such a rich and playful style of architecture prevails, as in their Renaissance churches. The student of colour need by no means confine himself to the interior of the churches for subjects of study in Palermo, as the street scenes in the tortuous lanes and alleys are usually most picturesque, especially if it happen to be washing day and near the outskirts. The prickly pears, acacias, and aloes give the scene a very Oriental aspect, which is heightened by the quaint colouring of the mule-carts with their brilliant and gaudy harness. The painting of these carts seems to be a survival of a very ancient art. The cart itself is a lightly framed vehicle with beautiful chamfered work on all the exposed edges, and usually elaborate wrought-iron ornaments and flowers rising from the axle beneath. The ground of the colouring is a brilliant yellow, with red, blue, and white stripes, and on the panels at the sides and back are painted, in a bold and vigorous style, scenes from the adventures of the Paladins, from the Scriptures and Apocrypha, and the doings of the everlasting Garibaldi. This art is a distinct tradition, and the drawing and grouping of some of the pictures are reminiscent of the arrangement of similar subjects in the Byzantine mosaics.

*Monreale*.—Magnificently situated on a hill a few miles inland from Palermo, the Cathedral occupies a very conspicuous position. It is very similar in style and arrangement to the Cappella Palatina, but on a vast scale. The exterior is interesting from the peculiar mixture of Gothic and Saracenic work. There is a splendid western Loggia and beautifully carved portal, with fine bronze doors. The effect of the interior is very grand, though perhaps inferior in point of colour to the Cappella, owing, I think, to the greater proportion of light admitted and to the staring whites in the restored mosaics executed after the fire. The nave arcade is stilted in the same manner as the Cappella at Palermo, and carried on granite columns with delicately carved capitals of marble. The mosaics are also, as in the Cappella, in three series of subjects: (1) scenes from the Old Testament on the walls of the nave; (2) scenes from the life of Christ in the aisles and transepts; and (3) from the lives of the Apostles on the transept arches. In the tribune is the usual bust of Christ, a Madonna enthroned below, and, underneath, a series of saints.

The drawing of the figures is even finer than at Palermo, and many of the subjects which are here treated as single pictures are there compressed into one containing two or three incidents. There is a magnificent mosaic floor of the usual geometric design, and wall linings in the same manner with large marble and porphyry slabs and



mosaic borders. The old roof was destroyed by fire, and is replaced by a modern restoration.

It is very interesting to observe the great similarity in composition and colouring which exists in these representations of Scriptural subjects. At Monreale and the Cappella Palatina many of the scenes are treated in an identical manner; but in the case of the larger church separate spaces are given to scenes which in the Cappella are compressed into one. In the manuscripts of this period the same composition may be observed, carried out to the minutest detail, and a conspicuous example of what I refer to is to be seen in the Pala d'Oro at St. Mark's, a magnificent series of gold sheets enamelled with subjects, in many cases the exact counterparts of the Monreale and Palermo mosaics on a reduced scale.

Adjoining the Cathedral is the Monastery of Benedictines, with a wonderful cloister of mosaic-inlaid columns in pairs, and beautifully carved capitals of Byzantine work. In the corner is a fountain, formed of a column with chevron flutings, and a basin below. The water escapes from the mouths of twelve lions' heads, between which are twelve figures of nymphs, and figures with musical instruments, &c., standing on dolphins, the whole forming a charming feature in the corner.

*Cefalu*, situated at the foot of a huge rock or cliff jutting into the sea, commands a fine view of the Sicilian coast westwards towards Termini and eastwards towards Messina. There is little of interest in the exterior of the Cathedral, but the fine proportion of the interior at once strikes one. It is in this respect much better than Monreale, the great height of the narrow nave being much more impressive than the more spacious proportions of the latter building. Only the eastern part of the choir and the tribune are now decorated with mosaics. They date from the beginning of the twelfth century, and are, I suppose, the finest in Italy. They consist chiefly of single figures of saints and prophets, with the invariable Sicilian feature of the head and bust of Christ in the semidome of the apse, and, beneath, Mary with four archangels. It is certainly a very perfect piece of decoration so far as it goes, but not to be compared with the other two examples, being so fragmentary.

*Girgenti*.—There is little in the way of colour-work to study at Girgenti, and the antiquarian interest of the ruined temples considerably exceeds the architectural. The coarse freestone of which they are constructed did not lend itself to the refinement which is usually associated with Greek mouldings, and those remaining are now much decayed. In the case of a small temple said to be dedicated to Castor and Pollux, the stone has been originally covered with a thin coat of stucco, and there are traces of colouring on the friezes and mouldings, far too indistinct, however, to afford any idea of the original effect.

*Pompeii*.—We had the fortune to arrive at

Pompeii just as a most interesting house was being excavated on the south-east side of the town. The paintings of this house are by far the finest of those yet discovered, and will compare favourably in execution and technique with those of the House of Livia on the Palatine, and other Roman examples in the Museo Nazionale.

We remained for two weeks during the excavations, in the hope of being allowed to make some drawings, but in this were only partially successful, notwithstanding the kind mediation of Professor Ruggiero of Naples. I was permitted to make a drawing of a small bronze statuette of a boy with silver eyes holding a duck which spouted water from its mouth into a marble basin. The "patina" of this statuette is the finest I have seen, and makes a lovely spot of colour. All the statues, fountains, basins, &c., of this courtyard remain in their original position, and the piping, taps, and cocks of the latter are still in good order.

The plan is similar to the usual Pompeian house—viz. a courtyard entered by a narrow passage, surrounded by a colonnade from which the various rooms are entered. These rooms are all decorated in different schemes of colour. One with a black background is particularly fine. First a dado of naturalistic plants about two feet high, then a narrow border of charming little cherubs engaged in various games and occupations (about nine inches high), then large panels with architectural framings and delicate wreaths and sprays of flowers (about ten feet), and above, on a white ground, an elaborate treatment of architecture—columns, architraves and pediments, mostly in pale greens, yellows, and pinks.

Another and even finer room, which I made several unsuccessful efforts to draw, had a dado with a geometric pattern, chiefly rich yellow; then a border of green about six inches, then a large panel of red in each wall with smaller white panels at the sides divided by decorated columns of green and black, and the usual architectural compositions above on a white ground. The chief interest of the room lay in three beautiful paintings, one in the centre of each red panel, representing mythological scenes; but at present the room is too carefully guarded for the student to profit by it.

Another scheme of colour consisted in dividing the height of the room into three almost equal divisions. The lowest was taken up with large panels of dark red, and in the centre of each a picture, alternately square and circular. Above this is a plaster moulding with small figures introduced in the cavetto in white gesso on a blue background, about six inches altogether. The next division has an architectural arrangement of pilasters on a white ground forming panels, broad and narrow alternately. In the larger are figures of gods and goddesses seated or standing, and in the smaller, conventional floral ornaments. Above is another moulding and a

space, of equal depth to the others, from which the ornament has disappeared.

The elaborate mosaic altars found in Pompeii are extremely interesting. Shells are very effectively used in the borders, principally cockles and large periwinkles.

By far the greater part of the treasures found in Pompeii have been removed to the Museum at Naples, and, on the whole, perhaps Pompeian decoration may be studied best there; but the authorities are now inclined to leave everything *in situ* as found, and carefully to preserve and protect it—a course which has been adopted in the house lately excavated.

*Rome.*—In Raphael's Loggie the paintings are sadly disfigured by barbarous restorers, but I was greatly attracted by his beautiful work in the Stanze. In these frescoes the constrained drawing that I afterwards saw in the work of Giotto and his school at Assisi has quite disappeared, and the splendid colouring and facility of composition remains.

As I had so lately been studying the mosaic work of Sicily, it was very interesting and instructive to compare with that the mosaics in the early Roman basilicas. They represent, of course, a much earlier phase of this art, and are crude in drawing when compared with those of Sicily, but the colour is very fine. In Santa Maria Maggiore there is a series of panels above the nave arcade representing the histories of Abraham and Jacob, and Moses and Joshua. These are said to date from the fifth century, and are the most typical examples of this period in Rome. They appeared to have a larger range of colour than those I had seen before. The tribune has fine mosaics of the twelfth century, almost identical in style with the Sicilian examples, representing the Coronation of the Virgin, &c.

San Prassede is another basilica retaining very nearly its original arrangement. It dates from the ninth century, and the east end has still the original mosaics. They are not so fine as those in Santa Maria Maggiore, but there is a very interesting picture of the New Jerusalem on the chancel arch. The town is guarded by angels, with Christ in the centre, and the saved are seen flocking towards it from either side. On the tribune arch is the Lamb with the seven candlesticks and symbols of the Evangelists at the sides; lower are the "four-and-twenty elders," and in the apse is a representation of Christ surrounded with saints. There is a little chapel in the right aisle entirely decorated with tenth-century mosaics on a gold ground.

The ceiling is a beautiful design, with a medallion in the centre of the vault supported by four angels. Above the altar is a Madonna between two saints. This chapel is rather difficult of access, as it contains what is supposed to be the column at which Christ was scourged—an object of great sanctity.

On the rising ground to the north-west of St. Peter's, called the Lungara, is the small church of Sant' Onofrio. The tribune of this is decorated by Peruzzi and Pinturicchio. The lower part is divided into panels containing three fine frescoes by Pinturicchio, and divided by borders of conventional flowers. The subjects are the Nativity, the Madonna enthroned, and the Flight into Egypt, of which the last is a splendid painting. The tribune semidome is divided into two ranges of three panels, the lower being occupied by a Coronation of the Virgin and groups of angels and saints in adoration, and the upper with groups of angels with scrolls, in the manner of Perugino, on a gold background. These paintings are carried out in a sombre key of colour, which gives great value to the gold when it is introduced.

There are also some fine examples of coloured work of the same period in the Museo Nazionale, found in a Roman house in the garden of the Villa Farnesina; and several stucco ceilings decorated in low relief with figures, animals, and other ornaments, and slightly coloured. They are, I believe, from the Baths of Caracalla.

*Assisi.*—At Assisi the great point of interest is the church of San Francesco. It is a double church, the lower one being practically a crypt, dimly lighted by narrow windows in the transepts and side chapels. The famous frescoes by Giotto and his school in the lower church have now become much darkened by centuries of incense and candle smoke, and can only be properly seen with a clear sky during the brightest hours of the day. The four spandrels in the crossing of the transept illustrate the vows of the Franciscan Order—poverty, chastity, and obedience—and the apotheosis of St. Francis. In the right transept is a series of heads of saints, drawn with great refinement, and ornamented with gesso work on the backgrounds. The halos are slightly raised, and a delicate ornament carried round each, of different design. In the left transept is a panel by Lorenzetti of a Madonna between two saints on a gold background—a most dignified and beautiful drawing. This medium seems to lend itself much more readily than mosaic to a freer and bolder style of drawing, and for depth and brilliancy of colour, in this instance at least, surpassed the mosaics I had seen. The vaulting ribs make a great feature in the scheme of decoration. They are very broad and massive, and are ornamented with geometric patterns, chevrons, &c., with broad borders running alongside each rib and dividing the paintings on the walls. The upper church is also decorated with frescoes in the style of Giotto, but they have suffered severely from damp, many of them being almost indistinguishable. They are now being restored as funds will permit, and in the present state of the work the effect is not good. The windows are filled with early glass, very fine and brilliant in colour.

*Perugia.*—There is a collection of paintings of



the Umbrian School in the Palazzo Pubblico, very rich in early works chiefly taken from reredoses, altarpieces, &c., which are most interesting. The Collegio del Cambio is decorated by Perugino with fresco, in his best manner. The ceiling has medallions with figures representing the planets on a blue background, and borders with the finest arabesque ornament I have seen. The lower part of the wall is panelled with beautiful inlaid work, and there are one or two benches or stalls similarly ornamented.

In the Piazza di Sopramura I saw some fine early Renaissance street buildings: one, in particular, beautifully decorated with sgraffito.

*Florence.*—I devoted most of my time to the frescoes by Giotto in the Bardi and Peruzzi Chapels at Santa Croce. In the former is depicted the life of St. Francis of Assisi in a magnificent series of pictures. The vows of the Franciscans are represented in the spandrels of the ceiling, as at Assisi, and the four great Franciscan saints in the arch over the window. In the Peruzzi chapel are represented the lives of the two St. Johns, in the same manner as the last. I also greatly admired the magnificent work in the Spanish chapel by Giotto's school, and the frescoes in the choir and transepts of Santa Maria Novella.

On the walls of the private chapel of the Palazzo Riccardi are the famous frescoes by Benozzo Gozzali, representing the journey of the Magi with their gifts to Bethlehem at the birth of the Saviour.

An Italian landscape of the conventional type familiar in pictures of this date is depicted, and a splendid procession of richly dressed personages, with their attendants on foot and mounted, some with hawks, dogs, and other signs of the chase. Many of the figures are portraits of the Medici family, whose chapel this was. Each side of the deep window recess has a splendid group of angels kneeling and standing in a garden, and hymning on one side "Laus Deo," and on the other "Gloria in Excelsis," the words of which are written round their halos of gold. In the sky above are groups of angels floating among clouds, and in the background a delightful landscape. Benozzo Gozzali's drawing, though rather stiff and constrained, lends itself admirably to decorative work such as this, and the conventional treatment of landscape is never sacrificed to the naturalistic and picturesque, as in the later schools.

There is a beautiful pavement in the Baptistery of inlaid marble, with the zodiac and inscriptions and many other patterns, which is well worthy of study, but time did not permit of this.

*Ravenna.*—The Ravenna mosaics struck me as being much cruder than those of Sicily, though very fine in colour. They are, of course, of early date, many of them belonging to the fifth century, as in Rome, but they are not equal in execution to the Roman examples, which seem to have attained their best period at this time.

Although the church of San Vitale has been

sadly disfigured, the mosaics in the choir and tribune are still very complete. The panels representing Justinian and Theodora presenting gifts to the church are on the sides of the tribune. Justinian is represented with a jewelled bowl in his hand, attended by Maximian and several soldiers and monks. Theodora has several ladies of her court, richly dressed, and monks similar to those with Justinian. These are perhaps the finest specimens of mosaics in Ravenna. Above the arch of the tribune are representations of the towns of Jerusalem and Bethlehem, which resemble each other greatly.

Sant' Apollinare Nuovo is another basilica of the same or earlier date. The interior of the nave is almost intact, and is one of the finest examples of its class. On the south wall is a representation of the city of Ravenna at the west end, and twenty-five saints or elders approaching Christ with wreaths. Opposite is the ancient town of Classis, with ships and the sea, and twenty-two virgins and the Magi along the wall. The background is all of gold, and the figures in white robes, with black lines suggesting the folds of the drapery. The faces and hands are coloured. Above these, between the clerestory windows, are single figures of saints, treated in the same manner, with borders round, and a kind of shell pattern above in a panel. Over the windows are compositions from the New Testament: on the north representing the miracles of Christ, and on the south the history of the Passion, similar in style to those in Santa Maria Maggiore at Rome, but much inferior. The nave arcade is supported on antique marble columns, mostly cippolino, with beautifully carved capitals. Like all the other buildings of Old Ravenna, the ground level has risen several feet all round, and in this case the floor has been raised as well, which no doubt impairs the effect of the interior.

The Baptistery, an octagonal domed building, is decorated with fifth-century mosaics. In the dome is represented the Baptism of Christ, with the river-god of the Jordan on a gold ground, and lower down are the twelve Apostles on a blue ground. The wall is decorated with two rows of arcades, the upper containing sixteen figures in panels, with stucco pilasters and mouldings, and windows between. Below there are fine mosaics of gold wreaths on a black ground, with figures of prophets at the angles. These are said to be the earliest mosaics in Ravenna. The mausoleum of Galla Placidia, a small domed building in the form of a Greek cross, is decorated with mosaic, also of the fifth century. The borders of flowers, leaves, &c., on the edge of the arches are very fine. Here are two sarcophagi, containing the remains of the Emperors Honorius and Constantius III.

About three miles south-east of Ravenna is the basilica of Sant' Apollinare in Classe, a most interesting specimen of an Early Christian basilica,

and the largest at Ravenna. It is now almost stripped of its mosaic decorations, but they still remain in the tribune, and date from the sixth century. In the dome Moses and Elias are represented on either side of a cross in the centre, and, below, Sant' Apollinare preaching to his flock. Beneath there are on one side the Sacrifices of Abel and Melchizedek, and on the other Constantius and other Roman emperors, with four archbishops. On either side of the rood arch are flocks of sheep hastening towards Christ (who is represented by a bust in the centre) from the towns of Jerusalem and Bethlehem.

*Venice.*—The façade of St. Mark's and the Ducal Palace seemed to me the finest piece of architectural colouring I had ever seen. The interior owes its effect to the beautiful arrangement of domes and the plan; the mosaics themselves, I should think, are inferior to the Sicilian ones. Among the finest, I thought, were those in the domes of the "atrio," or narthex, representing the creation of the world, the deluge, &c., in small panels; also the representation of the façade in the semidome over the north-western portal. The altar-piece is the famous Pala d'Oro, enamelled work on plates of gold and silver, with crystals and jewels worked in the borders. It is said to have come from Constantinople, and dates from the beginning of the twelfth century.

I spent several mornings in the Ducal Palace studying the beautiful ceilings by Tintoretto in the "Sala Quattro Porte" and the "Sala del Collegio," &c., by Paolo Veronese. The latter is a magnificent piece of decoration. The ceiling is divided into a number of irregular geometrical panels, each containing a picture. The finest of these represents Venetia on a globe, attended by Justice and Peace.

*Torcello.*—A unique specimen of an early basilica, almost in its original condition. The seats in the tribune are very curiously arranged in tiers round the episcopal throne in the centre. There are some fine mosaics in the apses of the aisles, but the great attraction is the magnificent series of mosaics on the west wall, representing "The Sacrifice of Christ," "The Resurrection," "The Last Judgment," &c. This is one of the finest pieces of mosaic decoration extant. There is a small octagonal church near the west end of Santa Maria, called San Fosca, dating from the twelfth century, but on a much earlier Byzantine plan. The preparations made for resisting the thrust of the intended dome are very interesting.

*Como.*—The cathedral here is a very beautiful specimen of the early Renaissance, and its severe lines and refined ornament and sculpture are quite a relief after the heavy, cumbrous work of the late Renaissance in Rome and Venice.

JOHN J. JOASS,

*Pugin Student 1892, Owen Jones Student 1895, Associate 1895.*



## MINUTES. XVI.

At the Sixteenth General Meeting (Ordinary) of the Session, held Monday, 22nd June 1896, at 8 p.m., Professor Aitchison, A.R.A., *President*, in the Chair, with 35 Fellows (including 17 members of the Council), 32 Associates (including 1 member of the Council), 4 Hon. Associates, and 27 visitors (exclusive of several ladies), the Minutes of the Meeting held 8th June 1896 [p. 467] were taken as read and signed as correct.

The Hon. Secretary announced the decease of Henry Crisp, *Fellow*.

The following members attending for the first time since their election were formally admitted and signed the respective Registers—namely, Arnold Bidlake Mitchell, *Fellow*, and Horatio Walter Lonsdale, *Hon. Associate*.

The President delivered an Address on the presentation of the Royal Gold Medal, the gift of Her Majesty The Queen, to Mr. Ernest George, *Vice-President*, who, having been duly invested therewith, replied in acknowledgment of the honour.

Mr. A. S. Flower [A.], M.A., F.S.A., one of the Hon. Secretaries of the Literature Standing Committee, gave a brief description of some drawings, forming part of the Institute Collection, which had been selected for exhibition.

The President having announced that the Council had decided to prolong the Session, and that a Special General Meeting would be held on the 6th July for the purpose of announcing the names of candidates recommended by the Council for election as Fellows, the proceedings terminated, and the Meeting separated at 9.15 p.m.

## PROCEEDINGS OF ALLIED SOCIETIES.

### THE DUNDEE INSTITUTE.

#### Prize Competitions.

The Syllabus of Subjects set for the annual prizes offered by the Dundee Institute of Architecture, Science, and Art has just been issued. With the exception of No. 2, which is limited to architects' pupils or apprentices in Forfar, Perth, and Fife, the competitions are open to all persons, under twenty-one years of age on 31st January next, residing in any part of Scotland north of the Forth. The value of the Prize in each competition is £2. 2s., and works must be sent in on or before 31st January 1897. The subjects are as follows:—(No. 1) Freehand Sketch-book of Architectural Subjects from existing buildings, not less than six pages, in pencil only; size of page not larger than 10 inches by 7 inches; must not be copied from any drawing. — (No. 2) Measured Drawing or Drawings of any Architectural subject, containing plan, elevation, and section to  $\frac{1}{8}$ -inch scale, and detail of a part to  $\frac{1}{2}$  full size. Measurement books to be lodged. Size, 21 inches by 14, with 4-inch margins or mounts. — (No. 3) Original Design for a Pediment with sculpture, in pencil or monochrome. Size of drawing, 26 inches by 13 inches, on imperial mounts. Scale, 1 inch to a foot. — (No. 4) Modelled or Carved Architrave, 7 inches by  $2\frac{1}{2}$  inches, Corner-piece showing Mitre. Total size of work, 13 inches by 13 inches. — (No. 5) Outline Drawing, from an Antique subject in the Dundee Art Museum of Casts. Size of Work, 22 inches by 14 inches, with 4-inch margins or mounts. — (No. 6) Design of Interior Glass Door and Over-door for a Town Hall, in any style, elevation and section to scale of 1 inch to 1 foot—shaded or coloured. Further



particulars may be had upon application to the Hon. Secretary, Mr. J. J. Henderson, 8, Bank Street, Dundee.

#### THE NORTHERN ASSOCIATION.

##### Proposed Chair of Architecture at Newcastle.

The Annual Report of the Northern Architectural Association for the current year states that the Art Department of the Durham College of Science having approached the Association with regard to the establishment of an Architectural Course of Study, a special Meeting of the Council of the Association was convened, at which the following resolutions were passed:—(1) That the Council of the Association are favourably disposed towards the general features of the curriculum of study suggested to the Durham College of Science, Newcastle-upon-Tyne, which is similar to that published by the Association in April 1893.\* (2) The Council are of opinion that the curriculum should be worked out, if possible, under the superintendence of a professor (or lecturer) who is or has been an architect. (3) That the Northern Architectural Association should be strongly represented on the Committee under which such professor or lecturer may act. At a subsequent meeting the following gentlemen were appointed a sub-Committee to deal with the question of a Professor of Architecture:—Messrs. Jos. Oswald [F.], F. W. Rich, A. Dunn, W. S. Hicks, and A. B. Plummer [F.]. The President and Hon. Secretary of the Association have been elected members of a Committee of the Art Department of the College entrusted with the preparation of the scheme of instruction for students intending to become architects.

The Report further states that numerous attended meetings of students of the Association were held during the past Session, and a class was formed to assist students preparing for the R.I.B.A. Examinations. The class, which is conducted by a committee, of which Mr. G. C. Smith [A.] is Hon. Secretary, has already undertaken and carried out excellent work, and all students in the district are strongly urged to join it.

## LEGAL.

### Combined Drainage.

REGINA V. VESTRY OF ST. MATTHEW'S, BETHNAL GREEN.

This was a rule *nisi* for a *mandamus* directing the Vestry of St. Matthew's, Bethnal Green, to repair and maintain a sewer. The matter was argued before Lord Chief Justice Russell and Mr. Justice Wright sitting as a Divisional Court on the 27th April, and judgment was delivered on 2nd June.

The London School Board, having purchased some land in Tyrrell Street, Bethnal Green, found that the drainage of a row of houses thereon had been carried out by pipes from the back of each house to a single pipe running in the rear of the houses parallel to Tyrrell Street and emptying into a sewer running under a cross-street. The common drain or pipe had been constructed in 1866, after the attention of the medical officer had been called to the former want of drainage, and apparently under the orders of the then owner of the houses. There was no record of any written permission being given by the vestry. The said drain or sewer drained other houses in Tyrrell Street than those purchased by the School Board. The School Board, having turned the land into a playground for a school, had put up offices in one corner, intending to drain them into the old common drain or sewer; but upon finding it defective and injurious to health, they called upon the vestry to repair and maintain it as a sewer. The vestry declined, on the ground that it was a private drain, or that if it were a sewer, it had been one constructed without their consent or the written consent of the Metropolitan Board of Works, as required by section 69 of the Metropolitan Management Act 1855, and sections 46 and 47 of the

Metropolis Management Amendment Act 1862; or, alternatively, that it was a combined system of drainage under the order of the vestry, and so excepted by section 250 of the first-named Act. The School Board thereupon obtained a rule for a *mandamus* on the vestry.

Mr. A. R. Jelf, Q.C., and Mr. F. Bevan showed cause against the rule for the vestry; and Mr. R. Cunningham Glen supported the rule for the School Board.

The Court held that, *prima facie*, a pipe draining several houses must be considered a sewer; that the fact of the requisite consent of the Metropolitan Board of Works not having been obtained would not necessarily prevent it from being a sewer; and that the proper inference on the facts was that the vestry must have known of its construction, since it could not have been connected with the second sewer without breaking up the cross-street. It therefore came within the decision in *Kershaw v. Taylor*.\* And, further, that while it (the drainage) must have been constructed with the knowledge of the vestry at the time, yet, there being no evidence of any order by the vestry, it did not come within the exception of section 250 of the Metropolis Management Act 1855, as "the draining of a block of houses by a combined operation under the order of a district board," and so not within the facts of *Bateman v. The Poplar Board of Works*.†

### Sky Signs.

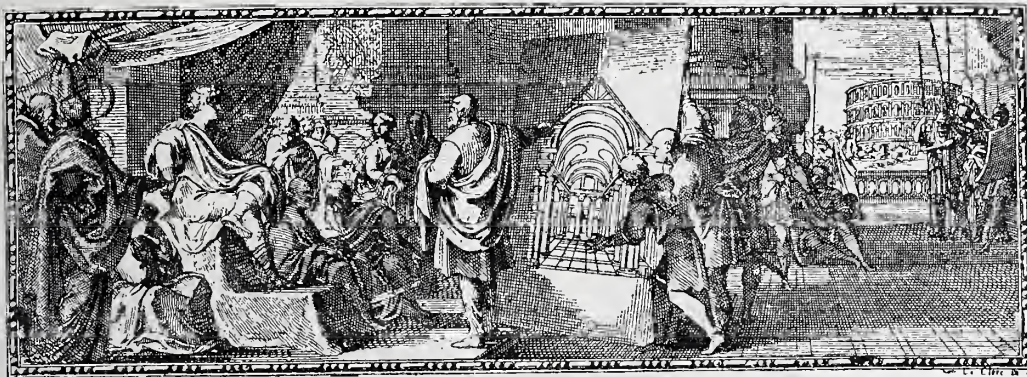
LONDON COUNTY COUNCIL V. SAVOY HOTEL COMPANY.

This was a special case stated by Mr. Vaughan, a metropolitan police magistrate, in accordance with an order made by the Lords Justices Lindley and Kay, sitting as a Divisional Court. The question at issue, which was argued before Mr. Justice Cave and Mr. Justice Wills on the 11th June, was whether the sign on the roof of the Savoy Hotel was a sky sign within the meaning of the Loudon Building Act 1894. The sign in question consisted of a series of boards to which were attached embossed letters in metal frames. The boards, which were fixed on the roof by iron supports and secured by the rods to the roof and chimney stack, were 118 feet in length and 7 feet to 8 feet in height, and the letters forming the words were 5 feet in height. The structure was erected before the passing of the Act of 1894, and the leave of the London County Council had not been applied for or obtained. The learned magistrate had found that the boards served the double purpose of completely securing the letters, and of screening and protecting the servants of the hotel, whose duties required them to ascend this portion of the roof, from the danger of falling over the sides. If it were removed, it would be necessary to substitute a railing or parapet. He also found that the boards were visible against the sky from the Embankment and other places, but that no portion of the letters forming the words "Savoy Hotel and Restaurant" was visible against the sky, but only against the boards, and held that the letters were not a sky sign within the meaning of the statute.—Mr. Horace Ivory, for the London County Council, submitted that the structure was a sky sign within the meaning of the Act of 1894, which stated that the term "sky sign" should apply to any sign wholly or in part upon, over, or above any building. Mr. Dickens, for the proprietors of the Savoy Hotel, contended that the sign in question was not "upon, over, or above" any building or structure, and therefore did not come within the meaning of the statute. The sign, he submitted, was placed against the building.—Mr. Justice Cave said he was clearly of opinion that this structure was "upon" the hotel. It was obviously a sky sign on a board fixed to and upon the parapet of the building. It was more than three feet high, and therefore not within the exemption. The case would go back to the magistrate with an expression of opinion that he ought to have convicted.—Mr. Justice Wills concurred.

\* JOURNAL, Vol. II. 3rd Series, pp. 643, 644.

† 56 Law J. Rep. Chanc. 149; L. R. 57 Ch. D. 272.

\* See THE R.I.B.A. KALENDAR 1893-94, p. 172.



## A WORD TO STUDENTS R.I.B.A.

THE ETHICS OF THE SKETCH-BOOK. By PAUL WATERHOUSE [*F.*], M.A.Oxon.

THE phases of our shifting Styles have their reflex in the changes of hunting-ground. This, as a general statement, is a truism not worth the saying; but looked into more intimately the facts have a significance at the present day which at least deserves some thoughtful estimation. That in days gone by the study of things Roman should have bred the Renaissance, and that reciprocally the Renaissance should have sent architects with their drawing-tackle to Rome, is a mere piece of artistic political economy, a bit of commonplace demand and supply, which calls for no comment, and has a parallel in every period of architectural importation. Our Gothic Revivalists scoured Europe for Gothic ammunition, and the creators whose activity adorned Regent's Park and Fitzroy Square dug ores in Greece or remote Spalato, though to be sure their manufactured article was a far cry from the original material. More recently, and with less transfiguration in the process, the sketch-book has borne its cargoes from the brick miracles of Bruges and Nuremburg, and from the placid wharves of Holland. Even Spain, hitherto sulking in peninsular seclusion behind the barriers of her Pyrenees, her impregnable language, and her marvellous railway system, has at last been forced into contribution; and more than once one has seen upon the walls of the architectural room at the Academy productions (essays rather than performances) which suggested at least the will to transplant into boreal England the growths of that alien and uncongenial land. In all these processes of transfer, as indeed in every aspect of the stupendous conditions that govern architectural production, there is opportunity for thought and speculation, but it is in the comparison of our own day with the past that we find a special object of consideration. Without disregarding the fact that architectural borrowing has been the practice of all ages except the primæval (witness the transplantation of Greek work to Roman, and the debt of Greece to Egypt and the East), it will probably be allowed that the present century has been pre-eminently the age of the sketch-book as a vehicle. Of course, in thus speaking of the sketch-book one means not merely, nor indeed at all, a collection of random and incomplete studies, but genuine architectural memoranda of all kinds, including measured drawings.

From the time when Nash, in 1800, set Augustus Pugin to work on the collection of Gothic materials which were to introduce an authentic character into the not too authentic mediævalism of the hour, there has been a continuous, unintermittent flow in the supply of such necessary evidences. The publication of these evidences in printed books is a second



stage in the process, and one that has done much to bring about that present condition of affairs which is so singularly in contrast with the days that are gone by. It is hardly possible for a student trained under modern conditions to so much as imagine the circumstances of our immediate forerunners. The elder men of our living generation, and those who were their predecessors—those, in fact, who were the leaders of the Gothic revival—had literally to find their own materials, to make their studies not in books but in buildings, and to refer when faced by a question of precedent either to their own sketch-books or to some far-away and at the time unrecorded example. A strange age of twilight groping; to realise its conditions and its difficulties is to gauge and to appreciate the magnitude of that movement, at present half neglected and sometimes more than half despised, which after all will certainly rank in the eyes of the future as the great feature of Victorian architecture. To-day we have at our elbows, or at the worst a few streets off, such storehouses of printed precedents that no one need go far for study or for appeal.

It is but a short while since all was otherwise. Some fifty years ago an English architect won, in open competition, the honour of building a church in a German seaport. In the preparation for his design he studied on the Continent innumerable buildings which he considered would train him in the style he should adopt. To be sure, in a German building it was excusable that he should wish to be German, and it is therefore not wholly to be regretted that he made Germany his field of study. But the reason of it is almost beyond our modern intelligence; it is hard nowadays to realise that this architect did not understand till three years afterwards that France, not Germany, was the real cradle of Gothic ecclesiastical architecture. The architect was no less a man than Sir Gilbert Scott, who paid his first visit to the French cathedrals *after* his appointment as restorer at Ely. Scott had built a matter of eight churches and carried out three restorations before he made that simple pilgrimage to the great churches of France which many a lad now takes in his pupilage. This goes to prove that even as recently as half a century ago the difficulties of scanty records were infinitely increased by actual doubt, even among professors of art, of the right sources in which to look for inspiration and teaching.

In Street's time such difficulties were less, but with him, also, his own sketch-book and his own memory were his standards of reference. What a sketch-book his was too, and what a memory!

In those days there sprang up the duty of sketching as a means of record. It became a duty on the part of architects, young and old, both to travel and to sketch, and in sketching to make faithful memoranda of what they studied and what they saw. The duty, at least in that special aspect, is now practically gone. You can hardly visit a building of beauty anywhere in Europe without the discouraging sense as you pull out sketch-book and pencil that all you see before you, and every detail of it, has been already recorded and published, and probably much better drawn than you can draw it yourself.

Here, then, we face the questions, what is the need of sketching, and what is the good of travel? The bookshelves of any good office, or failing them the Library at Conduit Street, will afford you the opportunity of studying, comparing, and committing to memory any building of importance in any country or of any age; why, then, should one travel a few hundred miles to make an inferior copy in one's own sketch-book or to study these things under less comfortable circumstances? The man who could seriously ask this question could never arrive at, could never understand, the answer. It is of course the fact that our many and accessible records have made study a thousand times easier, and have rendered possible as never before the science of *comparative* archæology. Nay further, these ready helps have made it no unlikely thing that a man should become even expert in the architecture of a country he has

never visited : certainly it is possible for a student to have knowledge, and real knowledge, of more than he can ever even attempt to see with his own eyes and draw in his own sketch-book. But is the sketch-book therefore to die? Never, and for these reasons. Primarily, because in architecture the pencil works with the brain, and the brain with the pencil. To draw is to learn. It is impossible to learn architecture without drawing ; it is impossible to draw architecture without learning. You can draw from engravings and photographs of course, but that is a lifeless sport at which Nature revolts, and you have to reckon with human nature even in an architect's fibre. Again, there are more things in a building than the best book can give you. We are saved the necessity of visiting all buildings, but we must visit some at least and we must draw some. The resources of other men's labours, engravings, lithographs, and photographs have brought us much ; they have taken away the need of sketching as a means of essential record, but they have not killed the sketch-book—rather they have given the sketcher a new scope and a glorious liberty—a liberty which no man should abuse. So long as you draw—and draw you must—you may now draw what you will. Some of the necessity has gone, but none of the duty ; and duty has its laws. Here are some of the guiding lines. Never draw to make a pretty sketch-book—Burgess taught us that. Of two subjects never choose the easier because it is the easier. Draw what you think you cannot remember rather than what you can. Never be timid, and, above all, draw whatever you admire. Such are the rules we glean from the direct teaching and still more from the indirect example of those who have been and are the great masters of that magnificent and most modest art, the art of keeping an architectural note-book.

The young man of to-day who visits for the first time some famous building is relieved from the necessity of making anything like a complete record of it ; but this should not by any means lighten his conscience of the duty of carrying away in his own mind, aided by his sketch-book, such memoranda as will enable him in imagination to reconstruct what he has seen. The practice of entering a cathedral and gleaning from it just so much as will provide a few pages of tasteful sketches is of course utterly reprobate. No doubt that man will learn most who on his first visit to the building draws nothing, but endeavours to absorb much. If on leaving the building he will attempt to put together on paper the general outlines of what he has seen, and on his second visit corrects the mistakes of his rough sketch, and fills the inevitable *lacunæ* by fresh observation, he will then have learnt much—far more indeed than if he had spent his first half-hour in making jottings of gargoyles or drawings of foliage. In buildings such as cathedrals, where plan is of importance, the plan should certainly be noted carefully, and rough general sections are by no means to be despised. They are not pictorial, and they do not interest the lady friends who look through your sketch-books, but they give the key to many a building, and they are as a rule sadly neglected by sketchers. Many men need to be reminded that there is a class of drawing which lies between the strictly measured drawing and the purely freehand sketch which is of infinite practical value. A record of the leading dimensions and an approximation of the main proportions can often be obtained when time does not allow of measuring in the usual sense. Notes of this kind, even if they be burnt as soon as made, will put more knowledge into a man's brain than the execution of volumes of pretty bits or whole sheaves of water-colours.

Briefly, our new position comes to this. We shall soon have no need, except in rare cases, to store up records for others, nor even for ourselves. Our process in drawing will be the same, accurate as ever, careful as ever, but for a changed purpose. We shall sketch, in fact, for the training of our hands, the strengthening of our memories, and the cultivation of that nameless and indefinable faculty which is the mainspring of art.





9, CONDUIT STREET, LONDON, W., 23rd July 1896.

## CHRONICLE.

### THE SUMMER EXAMINATIONS.

#### The Preliminary: Newly registered Probationers.

The Board of Examiners report that at the Preliminary Examination held in London, Manchester, and Bristol on the 16th and 17th ult., 103 persons were examined, of whom seventy-two passed, and the remaining thirty-one were relegated to their studies. The results of the Examinations in the various districts are shown in the following table:—

	Examined	Passed	Relegated
London . . . .	67	49	18
Manchester . . . .	25	15	10
Bristol . . . .	11	8	3
	103	72	31

The names and addresses, with other particulars, of the seventy-two who have passed, and of twenty-five exempted applicants—making a total of ninety-seven newly registered Probationers—are here given:—

ARMSTRONG: Hugh Kenneth; The Grammar School House, Sevenoaks [Queen Elizabeth's Grammar School, Sevenoaks].  
 BARNISH: Frederick Jardine; 18, Bridgeman Terrace, Wigan, Lancs. [University College, Liverpool].  
 BARRETT: Herbert Stanley; 53, Blomfield Road, Maida Vale, W. [Master: Mr. C. H. Driver\*].  
 BIRKBECK: Robert; Lower Royshaw, Blackburn [Masters: Messrs. Stones\* & Gradwell].  
 BISHOP: Harold Courtenay; 41, Clapham Common, S.W. [Master: Professor Banister Fletcher\*].  
 BISHOP: John Percival; Kline House, London Road, Forest Hill, S.E. [Master: Mr. W. W. Gwyther\*].  
 BLAKEY: Richard Palin; 58, Dundas Street, Sunderland [Master: Mr. G. T. Brown].  
 BOND: William George; 23, Eastover, Bridgwater [Master: Mr. A. Basil Cottam\*].  
 BRADBURY: George Ernest; 16, Alexandra Terrace, Prince's Road, Liverpool [University College, Liverpool].  
 BRÉE: Charles; 222, Euston Road, N.W. [Master: Mr. W. H. Atkin-Berry\*].  
 BRESSEY: Charles Herbert; The Cottage, Wanstead, N.E. [Master: Mr. John T. Bresse\*].  
 BUTLER: William Bernard; Tattenhall, near Chester [Master: Mr. T. M. Lockwood\*].

CLIFTON: Leonard Winton; Atherfield, Clifton Road, Winchester [Master: Mr. T. Stophor].  
 COCKRILL: Ralph Scott; Municipal Buildings, Great Yarmouth [Master: Mr. J. W. Cockrill\*].  
 COOPER: Harold; Pleasington, near Blackburn [Master: Mr. Walter Stirrup].  
 COXON: James Edgar; 1, South Bank Terrace, Surbiton [Master: Mr. R. J. Worley].  
 CRASS: Charles Harold; 12, Eastbourne Grove, S. Shields [Master: Mr. J. M. Dingle].  
 CROWLEY: Walter St. Leger; c/o C. B. Fowler, Esq., Douglas House, Cathedral Road, Cardiff [Master: Mr. C. B. Fowler\*].  
 CULVERHOUSE: Percy Emerson; Engineer's Office, Great Western Railway, Paddington [Master: Mr. Athwater].  
 CURREY: Harold Wynne; 55, Linden Gardens, W. [Master: Mr. Henry Currey\*].  
 DAVIES: Charles Edward; 3, Peckett Street, York [Master: Mr. Wm. Hepper].  
 DEAKIN: Frederick Montague; 60, Wyle Cop, Shrewsbury [Masters: Messrs. A. B. & W. Scott Deakin].  
 DEAN: William Mackereth; 59, Milton Road, Gravesend [Master: Mr. N. G. Pennington].  
 DECK: Herbert; The Castle, Winchester. [Master: Mr. J. Robinson].  
 DETMAR: Lionel Gordon; Ashburton, Thicket Road, Sutton, Surrey [Master: Mr. W. Hilton Nash\*].  
 ELLISON: Francis Beaumont, jun.; Ingleside, Birkenshaw, near Leeds [Master: Mr. William Watson].  
 ELWES: Robert Gervase; Holmebury, Bushey Heath, Watford, Herts [Master: Mr. W. N. Cobbold].  
 EVANS: Samuel Harrington; 32, Fortis Green Road, East Finchley, N. [Master: Mr. Arthur Whitcombe\*].  
 FAIRFOWL: Frederick William; 19, Upper Gray Street, Edinburgh [Masters: Messrs. MacGibbon & Ross].  
 FAWCETT: James Ernest; 10, Low Ousegate, York [Master: Mr. Wm. Hepper].  
 FINN: Harry Reginald; Mote House, Mote Road, Maidstone [Masters: Messrs. Ruck & Smith\*].  
 FOSTER: Alfred Herbert; 21, Gordon Street, Gordon Square, W.C. [Masters: Messrs. Oakden,\* Addison, & Kemp].  
 FOX: Cecil Croker; Penjerrick, Falmouth [Malvern College].  
 GELDER: Herbert; 145, West Park Street, Salford [Master: Mr. Joseph Nodal].  
 GOODWIN: Sidney Hall; 42, Albert Road, Croydon [Master: Mr. Reginald A. Crowley\*].  
 HALL: Frederick William Spencer; 5, St. Mark's Terrace, Leeds [Master: Mr. G. F. Danby].  
 HALL: Robert Charles; Stanton House, Park Hill Rise, Croydon [Master: Mr. R. A. Rix\*].  
 HALSE: Sidney Joseph; 41, Filmer Road, Fulham, S.W. [Master: Mr. John Medland\*].  
 HAMP: Stanley Hinge; Park House, Alperton Park, Harrow [Master: Mr. T. E. Collett\*].  
 HARRISON: Oliver Ormerod; 111, Mount Pleasant, Liverpool [University College, Liverpool].  
 HINCHLIFFE: Percy Archibald; Ayrfield House, Victoria Street, Barnsley [Masters: Messrs. Perkin\* & Bulmer\*].  
 HONAN: Matthew; 64, Princes Road, Liverpool [Masters: Messrs. Grayson\* & Ould].  
 HOOPER: Vincent; "Glington," Elms Road, Redhill [Master: Mr. T. R. Hooper\*].  
 HOPKINS: Percy Alfred; 37, Mortimer Street, W. [Master: Mr. Alfred J. Hopkins].  
 HORNBLLOWER: Thomas Bartlett; Strathaven, Hendon, N.W. [Tonbridge School].  
 HOW: William Murthwait; The Forelands, Chesham, Bucks [Master: Mr. E. E. White\*].

- HUTCHINS: Stanley Herbert; Crindaw House, Newport, Monmouthshire [*Master*: Mr. Benjamin Laurence].
- JERMAN: Fred; 87, Sidwell Street, Exeter [*Master*: Mr. Charles Cole].
- KNIGHT: Edward Frost; North Bank, Oakleigh Park, N. [*Master*: Mr. G. Baines\*].
- LAKE: George Hinton; 41, High Street, Exeter [*Master*: Mr. Charles Cole].
- LARGEN: Walter George; 19, Park Crescent, Stockwell, S.W. [*Master*: Mr. Edward Crosse].
- LORDEN: Leonard William Crandall; 33, Chalcot Crescent, Regent's Park Road, N.W. [*Master*: Mr. A. Bromley].
- LUKEY: George Edward; Leigh House, Canterbury [*Master*: Mr. W. J. Jennings].
- MACNAUGHTAN: Alan George; Fraoch, Bearsden [*Masters*: Messrs. John Burnet,\* Son,\* & Campbell].
- MARSHALL: Robert Campbell; 59, Abingdon Villas, Kensington, W. [*Master*: Mr. Cole A. Adams\*].
- MAYOR: Francis Maitland; Forest School, Walthamstow [Forest School, Walthamstow].
- MENNIE: Harvey; 56, Union Grove, Aberdeen, N.B. [*Master*: Mr. A. Clyne].
- MERRIMAN: George Frederick Maskelyne; "Rushmere," Worcester Park, Surrey [King's College].
- MIDWINTER: Arthur Adair; St. Paul's Vicarage, Blandford Square, N.W. [*Master*: Mr. Goymour Cuthbert\*].
- MILBURN: William Godfrey; Cintra, Beckenham, Kent [*Master*: Mr. Arthur J. Gale\*].
- MONEY: James; 720, Govan Road, Govan, Glasgow [*Master*: Mr. David V. Wyllie].
- MOORE: Edward Lionel; Edenhurst, 22, Grosvenor Road, Birkdale [*Master*: Mr. H. A. Matear\*].
- NORTH: Sidney Vincent; 62, Basinghall Street, E.C. [*Master*: Mr. D. Henry North].
- OAKES: Leonard Rycroft; 17, Market Street, Chorley, Lancs. [*Master*: Mr. W. Cecil Hardisty].
- OWEN: Frank Ifor Moran; Rock House, Menai Bridge, Anglesey [*Master*: Mr. Joseph Owen].
- OXLEY: Earnest; Melbourne Lodge, Clay Cross, Derbyshire [*Master*: Mr. W. H. Wagstaff].
- PARKER: Charles; 46, Berners Street, W. [*Master*: Mr. John Slater\*].
- PATERSON: Randolph James Elliot; 397, Chester Road, Manchester [*Master*: Mr. J. W. Beaumont\*].
- PHILLIPS: Louis Augustus; Rhoswen, Gold Tops, Newport, Mon. [*Masters*: Messrs. Habershon & Fawcner].
- PILSBURY: Richard Percy; Grosvenor Villas, Stoke-on-Trent [*Master*: Mr. A. R. Wood].
- PONSFORD: Reginald Albert; 5, High Street, Exeter [*Master*: Mr. James Jerman\*].
- RAYMOND: James Owen; 11, The Park, Yeovil, Somerset [*Master*: Mr. J. N. Johnston\*].
- RICHARDS: Ernest Llewellyn; 31, Noyna Road, Upper Tooting, S.W. [*Master*: Mr. W. R. Bryden\*].
- RIDER: Harry Edwin; 119, Haverstock Hill, N.W. [King's College].
- ROBINSON: John Godfrey; Cromwell Road, Grimsby [*Master*: Mr. H. C. Scaping].
- RODDA: George Davidson; 6, Gold Street, Roath, Cardiff [*Master*: Mr. J. H. Phillips].
- ROSS: James MacLaren; 14, Saxe Cobourg Place, Edinburgh [*Masters*: Messrs. MacGibbon & Ross].
- SLATER: Martin Arthur; 74, Lincoln Road East, Peterborough [*Master*: Mr. H. M. Townsend\*].
- SMITH: Alpheus Edward; Lime House, Gonerby Road, Grantham [*Master*: Mr. C. W. Smith].
- SMITH: Thomas Marshall; 39, Regina Road, Tollington Park, N. [*Master*: Mr. H. G. Brace\*].
- SUTCLIFFE: Charles Frederick; c/o Edmund Kirby, Esq., 5, Cook Street, Liverpool [*Master*: Mr. Edmund Kirby\*].
- SWORDER: Harold John Burnaby; Forest School, Walthamstow [Forest School, Walthamstow].
- TAYLOR: Frank; The Willows, Taunton Road, Bridgewater [*Master*: Mr. A. Basil Cottam\*].
- THICKPENNY: Charles Reginald; Breydon House, Lansdowne Road, Bournemouth [*Master*: Mr. Douglas Stewart].
- THOMPSON: Waude; 32, Kingsland Road, Oxtou, Birkenhead [Liverpool Institute High School].
- THORP: Norman; Dobroyd, Todmorden [*Master*: Mr. John Brooke\*].
- TOOMBS: Edwin Ashley; 12, Keith Gardens, Shepherd's Bush, W. [*Master*: Mr. Robert Willey\*].
- TRACY: Bernard David; 13, Hungerford Road, Holloway, N. [Hillmartin College].
- VARNDELL: Charles Edward; 286, Vauxhall Bridge Road, S.W. [*Master*: Mr. W. H. Seth-Smith\*].
- VIGOR: Arthur Frederick; Kensington Palace Mansions, De Vere Gardens, W. [King's College].
- WALLER: Arthur; 17, Vernon Road, Clapham, S.W. [*Master*: Mr. A. Frampton\*].
- WARD: Bernard Michael; Moorside, Glossop [University College, Liverpool].
- WARDEN: Edward; "Newark," Kew Gardens, Surrey [King's College].
- WHITE: Horace; "Ellesmere," Loughton, Essex [*Master*: Mr. Edmond Egan\*].
- WICKHAM: Sidney; 54, George Street, Portman Square, W. [Polytechnic Classes].
- WILSON: Henry Armstrong; 20, Broughton Road, South Shields [*Master*: Mr. C. S. Errington\*].
- WOOD: Alexander Cuthbert Charles, M.A., F.S.A.; 3, St. Peter's Square, Ravenscourt Park, W.

The asterisk \* denotes members of the Institute.

Of the thirty-one applicants relegated to their studies, ten failed in two subjects, ten in three subjects, five in four subjects, two in five subjects, two in six subjects; and two in all subjects.

#### The Intermediate: Newly registered Students.

At the Special General Meeting of Monday, the 6th inst., the President announced that an Intermediate Examination had been held in London and Manchester on the 16th, 17th, 18th, and 19th ult., and that of the seventy-eight Probationers (including twenty-two relegated from previous Examinations) who applied, seventy-one were admitted, of whom sixty-six presented themselves and were examined. Of these, thirty-four passed—viz. thirty-one in London, and three in Manchester—and the remaining thirty-two were relegated to their studies. The thirty-four, placed by the Board of Examiners in the order of merit, are:—

- DE GRUCHY: Charles [*Probationer* 1893]; 13, Melody Road, Wandsworth Common [*Master*: Mr. W. J. Ancell].
- ANSELL: William Henry [*Probationer* 1894]; Kingston Street, Derby [*Masters*: Messrs. Naylor\* & Sale].
- WILSON: Frank [*Probationer* 1893]; 225, Nottingham Street, Sheffield [*Master*: Mr. C. J. Innocent\*].
- KENDALL: George Ernest [*Probationer* 1893]; Humberstone, near Leicester [*Masters*: Messrs. R. J.\* & J.\* Goodacre].
- TRAQUAIR: Ramsay [*Probationer* 1894]; 8 Dean Park Crescent, Edinburgh [*Master*: Mr. S. H. Capper\*].



RIDDEY: Charles [*Probationer* 1894]; 42, Midland Road, Wellingborough [*Masters*: Messrs. Talbot Brown\* & Fisher].

TYRWHITT: Thomas [*Probationer* 1894]; 36, St. George's Square, S.W. [*Master*: Mr. Aston Webb\*].

BRUMELL: George, jun. [*Probationer* 1893]; Morpeth [*Masters*: Messrs. Hicks & Charlewood\*].

HALL: Charles Llewellyn [*Probationer* 1895]; The Glyn, Whalley, near Blackburn [*Masters*: Messrs. Stones\* & Gradwell].

SCRIVENER: Edward Douglas Mountford [*Probationer* 1895]; The Cedars, Newcastle, Staffs [*Masters*: Messrs. R. Scrivener & Sons].

WATTS: Harold [*Probationer* 1893]; 2, Hoe Park Terrace, Plymouth [*Master*: Mr. H. J. Snell].

BEAUMONT: William Somerville [*Probationer* 1893]; 10, St. James's Square, Manchester [*Master*: Mr. J. W. Beaumont\*].

SETTLE: William Moss [*Probationer* 1894]; Woodgarth, Ulverston, Lancashire [*Master*: Mr. George Dale Oliver\*].

COWIE: Alexander [*Probationer* 1894]; 109, Leslie Terrace, Aberdeen [*Master*: Mr. A. Marshall Mackenzie].

RUDDLE: Alan Wilfrid [*Probationer* 1894]; Broughbury, Peterborough [*Master*: Mr. James Ruddle].

FLEMING: Frank Leonard Hodgson [*Probationer* 1894]; c/o Messrs. Beazley & Burrows, 17, Victoria Street, S.W. [*Masters*: Messrs. Beazley & Burrows\*].

COOKE: Henry Fothergill [*Probationer* 1895]; 4, Normanton Road, Clifton, Bristol [*Master*: Mr. F. Bligh Bond\*].

COTTRILL: Gilbert St. John [*Probationer* 1893]; c/o C. B. Oliver, Esq., Architect, Bath [*Master*: Mr. C. Bryan Oliver].

TENCH: Edwin James [*Probationer* 1894]; 62, Prince of Wales Road, Norwich [*Masters*: Messrs. Edw. Boardman\* & Sons].

CAUTLEY: Henry Munro [*Probationer* 1893]; Westfield Rectory, near Ipswich [*Master*: Mr. E. F. Bisshopp].

CHARLES: Bessie Ada [*Probationer* 1893]; 63, Gloucester Place, Portman Square, W. [*Masters*: Messrs. Ernest George\* & Yeates\*].

DEVLIN: William John [*Probationer* 1891]; 59, Sidney Street, S.W. [*Master*: Mr. Walter G. Doohn].

DUKES: William Batley [*Probationer* 1893]; 81, Amhurst Park, Stamford Hill, N. [*Master*: Mr. A. S. Flower\*].

CARDEN: Robert Walter [*Probationer* 1893]; 32, Leinster Square, Bayswater, W. [*Master*: Mr. William A. Pite\*].

CLARK: Clement Wightman [*Probationer* 1893]; Sharon, Rotherham, Yorks. [*Masters*: Messrs. Flockton,\* Gibbs,\* & Flockton\*].

FLOWER: Victor Augustine [*Probationer* 1893]; 26, Stanhope Gardens, S.W. [*Master*: Mr. A. S. Flower\*].

GAGE: Charles Henry [*Probationer* 1894]; Liverpool Chambers, Corn Street, Bristol [*Master*: Mr. F. Bligh Bond\*].

GUEST: Harry Beauchamp [*Probationer* 1894]; 265, Soho Road, Handsworth, Birmingham [*Master*: Mr. W. H. Bidlake\*].

HAYWARD: Arthur Baldwin [*Probationer* 1892]; 47, Museum Street, W.C. [*Master*: Mr. C. Forster Hayward\*].

HEWITT: Thomas Francis [*Probationer* 1892]; Glenhome, Cowes, I.W. [*Master*: Mr. Ernest A. Swane].

LEES: Ernest William [*Probationer* 1892]; 35, Mecklenburgh Square, W.C. [*Master*: Mr. W. Hewson Lees\*].

QUILTER: Walter Vernet [*Probationer* 1892]; 19, Vardens Road, Wandsworth Common, S.W. [*Masters*: Sir Arthur W. Blomfield\* & Sons].

TOMLINSON: Charles William [*Probationer* 1892]; Market Place, Pontefract, Yorks [*Master*: Mr. W. A. Hobson].

WHITWELL: Francis Albert [*Probationer* 1891]; 14, King Street, Portman Square, W. [*Master*: Messrs. Alfred Waterhouse\* & Son\*].

The asterisk \* denotes members of the Institute.

These persons have been registered as *Students R.I.B.A.*, thereby increasing the number to 181. Of the thirty-two Probationers relegated to their studies until the Autumn Examinations, two were relegated in all subjects, three in eight subjects, one in seven subjects, seven in five subjects, seven in four subjects, seven in three subjects, and five in two subjects.

#### The Final: Qualifying for Candidature as Associate.

The Board of Examiners report that at the Final Examination held in London and Manchester from the 26th ult. to the 2nd inst., forty-eight persons were examined—viz. forty-three in London and five in Manchester. Of this number seventeen passed in London and four in Manchester; and the remaining twenty-seven were relegated to their studies. The names and addresses of the twenty-one who passed and are qualified (subject to Section 8 of the Charter) for candidature as Associate here follow:—

BATESON: James Wrightson; 6, Mornington Street, Regent's Park, N.W.

BROOKS: Thomas Denton [*Probationer* 1890, *Student* 1893]; South Elmsale, near Doncaster.

CHATTERTON: Frederick [*Probationer* 1892, *Student* 1893]; 14, Hillmarton Road, Camden Road, N.W.

CHORLEY: Harry Sutton, M.A.Oxon. [*Probationer* 1891, *Student* 1893]; 15, Park Row, Leeds.

DAWE: Sydney; Hawthorn Grove, Wilmslow, Cheshire.

DOSSOR: John Malcolm; Perchard House, 70, Gower Street, W.C.

FOX: George; Hampden House, Phoenix Street, N.W.

GRAYSON: George Hastwell, B.A.Cantab. [*Probationer* 1893, *Student* 1894]; 31, James Street, Liverpool.

GREWCOCK: William Thomas [*Probationer* 1889]; 6, Millstone Lane, Leicester.

GRIMBLE: Thomas Culy; Clifton Chambers, Lytham, Lancashire.

HARRIS: Charles William [*Probationer* 1893, *Student* 1894]; 96, Durning Road, Edge Lane, Liverpool.

HAYES: Louis Antonio; The Heathers, Kersal, Manchester.

JAMES: Richard Croft [*Probationer* 1889, *Student* 1892]; 3, Cornwallis Villas, Goldney Road, Clifton, Bristol.

MARCHANT: Robert [*Probationer* 1890, *Student* 1892]; Cedar Lawn, Sutton at Hone, Kent.

NAPIER: Herbert Edgar; 81, Lancaster Road, Notting Hill.

OWEN: Segar [*Probationer* 1891, *Student* 1894]; 47, Connaught Street, Hyde Park Square, W.

ROBSON: Philip Appleby [*Probationer* 1889]; Palace Chambers, 9, Bridge Street, Westminster, S.W.

SINCLAIR: George; 67, James Street, Kingston, Glasgow.

SMITH: Harry James Gee; 22, Albert Road, Addiscombe, Croydon.

SMITH: Richard Harold [*Probationer* 1891, *Student* 1893]; 34, Ravenswood Road, Redland, Bristol.

STANBURY: William Henry (Gibraltar); 2, Lebanon Gardens, Wandsworth, S.W.

Of the twenty-seven applicants relegated to their studies, two failed in one subject, fourteen in two subjects, five in three subjects, and six in four subjects. The following table shows the number of failures in each subject :—

I. Design . . . . .	17
II. History . . . . .	11
III. Mouldings and Ornament . . . . .	19
IV. Sanitary Science . . . . .	10
V. Materials . . . . .	1
VI. Strength of Materials . . . . .	2
VII. Construction . . . . .	2
VIII. Specifications . . . . .	7
IX. Professional Practice . . . . .	0

#### International Competition for Theatre, Kiev.

Professor Victor A. Schröter [*Hon. Corr. M.*] writes from St. Petersburg on the 28th ult. that the municipal authorities of Kiev, with the aid of the St. Petersburg Imperial Society of Architects, are organising an international competition for designs for a theatre in Kiev. The building is to seat 1,500 spectators, and to cost 450,000 roubles. Plans must be sent in on or before the 3rd December 1896. A premium of 2,500 roubles will be paid to the author of the best design; 1,500 roubles to the second; 1,000 to the third; 700 to the fourth; and 300 to the fifth. The members of the jury of selection are Professors N. Benois and R. Gödicke; the Academicians Count F. Suzor, K. Maievsky, and K. Preis; Civil Engineers R. Geshöndt and Tsalmanovich, and three representatives of the municipal authorities. Printed conditions and particulars of the competition, Professor Schröter adds, will shortly be issued to the foreign Architectural Bodies.

#### The late William Henry Clark [*F.*].

William Henry Clark, whose death occurred at Bristol on the 9th May last, had been a Fellow of the Institute since 1879. He was born in January 1842, and was educated at Dr. Stone's and the Cathedral School, Bristol. He was articled to the late Mr. C. Underwood, architect and surveyor, of Bristol; and on the termination of his articles came to London, and served for a time as assistant in the office of the late Mr. G. Aitchison, father of the present President of the Institute. He was afterwards engaged in the offices of the late Sir Digby Wyatt, Colonel Edis, and Mr. Thomas Blashill. Returning to Bristol about twenty-three years ago he started in practice for himself, carrying on business and residing at 25, Arley Hill. Several buildings in Bristol and neighbouring districts were erected from his designs, including the Anglo-Bavarian Brewery, Shepton Mallet, and various other breweries.

#### The late Henry Crisp [*F.*], for many years President of the Bristol Society.

Henry Crisp, who died at Clifton on the 8th ult., at the age of seventy, was elected a Fellow in

1889, and served for some years on the Council as the representative of the Bristol Society. He was the son of the Rev. Thomas S. Crisp, a former President of the Baptist College, Stokes Croft, and was articled to the late Thomas Foster in the year 1845. On the expiration of his articles he commenced practice on his own account, and successfully engaging in several competitions soon laid the foundations of an extensive business. Pilning Church was erected from his designs, and he superintended the alterations of Stonehouse Church and St. Cuthbert's, Wells. Subsequently entering into partnership with the late E. W. Godwin, the firm carried out many important works, including Glenbeigh Towers, a residence in Ireland; the new administration department and considerable extensions of the Bristol Lunatic Asylum; the Nurses' Home and new wards at the General Hospital; the police stations at Bedminster and Redland; and the showrooms and factories of the Bristol Wagon Works. In the competition for the Guildhall, Bristol, the firm submitted three designs, and were awarded all three premiums; none of their designs, however, was eventually adopted, and the work passed into other hands. Numerous business premises and vicarages were erected from Mr. Crisp's designs, and he carried out the restoration of Dundry Church Tower. In 1888 he took into partnership Mr. G. H. Oatley, who had been associated with him since 1879; and in 1894 the firm, in conjunction with Mr. W. S. Skinner, won the competition for a lunatic asylum for 2,000 patients at Winwick in Lancashire, a work still in progress, and estimated to cost over £250,000. Mr. Crisp had been President of the Bristol Society since the death of Charles Hansom in 1888, and only resigned the office through failing health a few weeks before his death.

#### The British School at Athens.

The Report of the managing committee for the Session 1895-96 gives an encouraging account of the present position of the British School at Athens. Thanks to the firmer basis upon which its finances have been put, the feeling of comparative security has greatly facilitated its operations. The annual subscriptions have doubled during the past year, and with the expected Government grant of £500 per annum for five years the committee anticipate an income of at least £1,400 for some years. This is a wonderful improvement on the outlook of a year or two ago, and encourages the hope that in course of time the finances of the School may perhaps even compare with those of its French, German, and American rivals. All interested in the School will fervently hope that Mr. John Morley's suggestion in this connection will bear fruit, and that the South African Cræsus to whom he advises diplomatic appeal will rise generously to the occasion.



The year's work includes excavations on the island of Melos : at Klima, on the coast, below the ancient city of Melos ; at Trypeti, a village above the city, where some Dipylon tombs were opened and fragments of vases found, and also some tombs of the sixth century B.C., yielding various gold and silver ornaments ; at Tramythia, near Klima, where was unearthed a mosaic pavement, which for completeness and for beauty of design and colouring compares favourably with any previously found in Greece ; and at Phylakopi, where traces of a Mycenaean city have been discovered which will amply repay further investigation. Excavations have also been carried out in Athens itself, the site being a plot of open ground south-west of the Olympieion, on the opposite bank of the Ilissos. Here there is a plateau between two hills which Dr. Dörpfeld [*Hon. Corr. M.*] considered likely to be the site of the Kynosarges, with its gymnasium and its shrine of Herakles ; under a mass of later work traces have in fact been found of a large building which in extent and construction might well be a gymnasium. In working over the ground upwards of eighty tombs were found, mostly of the geometric period. The excavations yielded fragments of geometric vases, sepulchral inscriptions, portion of a very fine stele of the early part of the fourth century B.C., and fragments of a large early Attic amphora, which is an important monument for the history of vases of a period as yet but little represented. In an adjoining field were found remains of a Roman colonnade, and also an important water-conduit, which seemed to be connected with a gymnasium of the time of Hadrian.

Substantial additions have been made to the School Library during the year, and the nucleus of a museum has been formed. In these and other respects the Director has had continually in view the possibility of establishing the closest relations between the various Schools and with the Greek Archaeological Society, so that in the end they might constitute a kind of international archaeological university.

A matter of importance, and one deserving the generous support of all friends of the School, concerns the accommodation for students. The managing committee are endeavouring to raise funds to enable them to provide suitable quarters adjoining the School. At least £1,200 is needed for this purpose.

#### The "Drain-Sewer" Question.

The sempiternal "drain" or "sewer" question still vexes the Courts. In a recent case, according to the *Law Journal*, the Lord Chief Justice was provoked to very strong comments in Court on the difficulties caused by the Public Health Act definitions owing to the varying terms of those used in the Acts of 1875 and 1890 ; and from his place in the House of Lords he succeeded in pre-

venting the passing of a small tinkering bill calculated, in the supposed interests of the sanitary authorities, to make confusion worse confounded. And now, in *Regina v. The Bethnal Green Vestry* [p. 512], the Court of Appeal have extended the decision in *Kershaw v. Taylor* [JOURNAL, Vol. II. Third Series, pp. 574, 643] to a case where a sewage conduit had been laid down without an order of the Metropolitan Board of Works under section 69 of the Metropolis Management Act of 1855, and in violation of the Metropolis Management Act 1862, the Court holding that it had become nevertheless a sewer and vested in the local authority (section 68 of the Act of 1855). In these cases the ratepayer is made to suffer for the laches of vestries and their officers in the past, as well as for the inadequacy of the provisions of the Acts on the subject ; and it is of the highest public importance that the law both in London and outside on the subject of drains and sewers should be both amended and codified in an intelligible and reasonable form.

#### Exhibition of Metal Work at Glasgow.

The Glasgow Institute of Architects propose to hold an Exhibition of Metal Work at their rooms, 187, Pitt Street, Glasgow, in October. The exhibits will include cast and wrought iron, brass and copper work, ormolu, lead, silver, or other metals capable of decorative treatment. Contributions of old examples are invited, as well as the best class of modern work. Drawings and photographs of metal-work will be included.

#### Chair of Architecture, McGill University, Montreal.

The *Daily Chronicle* of yesterday announced that Mr. S. Henbest Capper [A.], M.A., of Edinburgh, had been appointed to the Chair of Architecture at the McGill University, Montreal. The Chair was founded quite recently through the munificence of Mr. William McDonald.

#### Books received from Publishers.

*Le Premier Siècle de l'Institut de France*, 25 Octobre 1795-25 Octobre 1895. Par le Comte de Franqueville, Membre de l'Institut. 2 vols. 4o. Paris 1895. [J. Rothschild, 13, Rue des Saints-Pères, Paris.]

*The Churches and Monasteries of Egypt and some Neighbouring Countries, attributed to Abū Sālēh the Armenian*. Translated from the original Arabic by B. T. A. Evetts, M.A., Trinity College, Oxford. With added Notes by Alfred J. Butler, M.A., F.S.A., Fellow of Brasenose College, Oxford. With a map. Sm. 4o. Oxford 1895. [Henry Frowde, Oxford University Press Warehouse, Amen Corner, E.C. ; Messrs. Macmillan & Co., 66, Fifth Avenue, New York.]

*The Ancient Coptic Churches of Egypt*. By Alfred J. Butler, M.A., F.S.A., Fellow of Brasenose College, Oxford. 2 vols. 8o. Oxford 1884. [Henry Frowde, Oxford University Press Warehouse, Amen Corner, London, E.C.]

*The Town Walls of Newcastle-upon-Tyne*. By Sheriton Holmes. Pam. 8o. Newcastle-upon-Tyne. [Messrs. Andrew Reid & Co., Limited, Printing Court Buildings, Newcastle.]

*Domestic Sanitary Drainage and Plumbing*. By William

R. Maguire, Assoc.Inst.C.E. 8o. Lond. 1896. [Messrs. Kegan Paul, Trench, Trübner, & Co., Limited, Paternoster House, Charing Cross Road.]

*History of the Horn Book.* By Andrew W. Tuer, F.S.A., author of *Bartolozzi and his Works*, &c. Illustrated. 2 vols. 4o. London and New York. [The Leadenhall Press, Limited, 50, Leadenhall Street, E.C.; Simpkin, Marshall, & Co.; Charles Scribner's Sons, New York.]

*A Treatise on Heraldry British and Foreign, with English and French Glossaries.* New and enlarged edition. By John Woodward, LL.D., Rector of St. Mary's Church, Montrose. 2 vols. 8o. Edinb. 1896. [Messrs. W. & A. K. Johnstone, Edina Works, Easter Road, Edinburgh.]

#### Additions to the Library.

The first volume of *Modern Opera Houses and Theatres: Examples selected from playhouses recently erected in Europe, with descriptive text, a treatise on theatre-planning and construction, and supplements on stage machinery, theatre fires, and protective legislation*, by Edward O. Sachs and Ernest A. E. Woodrow [A.], has been presented to the Reference Library by Mr. H. L. Florence [F.], to whom the Literature Committee at their last meeting accorded a special vote of thanks for this handsome donation [London: B. T. Batsford]. The present volume of this monumental work, which will be completed in three volumes, contains one hundred plates and ninety-three illustrations in the text, dealing altogether with twenty-four theatres, out of which eight of the examples illustrated are English.

The Council of the Königlichen Akademie der Künste, Berlin, have presented *Die Königliche Akademie der Künste zu Berlin 1696 bis 1896*, by Hans Müller, who gives an interesting history of the Academy from its foundation until the present day. The book is admirably got up and contains numerous full-page plates, besides illustrations in the text. *Die Garrison Kirche zu Hannover*, an interesting and finely illustrated monograph of the Garrison Church of Hanover, the foundation-stone of which was laid on the 5th April 1892, has also been received. The architect was Herr Christoph Hehl.

The fourth edition of the first part (Paris, 1875) and the third edition of the second part (Paris, 1870) of a *Traité d'Architecture*, by M. Léonce Reynaud, have been added to the Reference Library.

Mr. Harry Sirt [A.] has presented the third edition of *Leadbeater's Gentleman and Tradesman's Compleat Assistant* (London, 1770); *A Catalogue of Engravers who have been born or resided in England*, digested by Horace Walpole from the MSS. of George Vertue, second edition (London: J. Dodsley, 1786); and *The Builder's Pocket Manual, containing the Elements of Building, Surveying, and Architecture, with practical rules and instructions connected with the subject*, by A. C. Smeaton (London: Dean & Son, 1847).

The first issue of *Academy Architecture and Architectural Review* for 1896 (vol. ix.) has been

received from the editor, Mr. Alex. Koch. This useful compilation contains, besides a selection of the architectural drawings hung at the exhibitions of the Royal Academy, the Royal Scottish Academy, and the Glasgow Institute of the Fine Arts, illustrations of contemporary sculpture, and an illustrated review of architectural works carried out or designed during the last few years in England and abroad [London: *Academy Architecture*, 58, Theobalds Road, W.C.].

The *Transactions* of the Edinburgh Architectural Association (vol. iii. No. 2) contain the opening address of the President, Mr. W. W. Robertson, F.S.A. (Scot.), entitled "The Journal of "James Playfair, Architect, 1783-1793," and the following papers: "Dalmeny House, Barnbougle "Castle, Dalmeny Church," by Hippolyte J. Blanc, A.R.S.A.; "The Carmelite Priory Church, "South Queensferry," by Thomas Ross, F.S.A. (Scot.); "Ancient Mural Decorative Art in Scot- "land, Ecclesiastical and Secular," by Thomas Bonnar, F.S.A. (Scot.), &c. The *Transactions* of the Essex Archaeological Society (vol. vi. Part 1) contain, amongst other papers, "Hornchurch "Priory," by J. Horace Round, M.A.; "Roman "Pottery Kiln, Shoeburyness," by H. Laver, F.S.A.; "On the Custom of Setting-up Royal Arms "in Churches," by C. F. D. Sperling, M.A.; and "Ingrave" (illustrated), by the Rev. H. L. Elliot, M.A. A *Catalogue* of the books, pamphlets, periodicals, MSS., and scrap collections in the Library of the Essex Archaeological Society has also been received from the same Society.

Mr. James Dillon, Vice-President of the Institution of Civil Engineers of Ireland, has a paper in vol. xxiii. of the *Transactions* of that body "On Some "of the Most Modern Methods of Dealing with "the Sewage of Cities and Towns," and vol. xxiv. of the same *Transactions* contains "Notes on "Further Experience in Creosoting at High "Temperatures," by John P. Griffith; "Dis- "tinctive Features and Advantages of American "Bridge Practice," by Edward Barrington; "The "Application of Recent Advances in the Study "and Treatment of Sewage," by W. Kaye Parry, &c. The *Transactions* of the Surveyors' Institution (vol. xxviii. Part 12) include the Report of Council, List of Members, &c., and an admirable portrait of the late Mr. John Clutton, the first President of the Institution. The *Minutes of Proceedings* and *List of Members*, &c., of the Institution of Civil Engineers (vol. cxxiv.); *Calendar* of the Glasgow and West of Scotland Technical College, Session 1896-97; *Annales de la Société d'Archéologie de Bruxelles* (vol. x. Parts 3 and 4); and a list of Members of the Oesterreichischen Ingenieur- und Architekten-Vereines have also been received from their respective institutions.

The author [*Hon. Corr. M.*] and Mr. John Hebb [F.] have each presented copies of *Cavaliere*



Giacomo Boni's pamphlet *Flora dei Monumenti* referred to by Mr. Hebb in his note in a recent number of the JOURNAL [p. 443].

The Secretary of the Sanitary Institute has forwarded an illustrated *List of Exhibits* to which medals have been awarded at their Exhibitions, held in connection with the Congresses at Worcester (1889), Brighton (1890), Portsmouth (1892), and Liverpool (1894). The *Journal* of the Sanitary Institute (vol. xvii. Part 11) containing a Paper on the "Factory and Workshop Acts, and "the Powers and Duties of Sanitary Authorities "with regard to Workshops," by John F. J. Sykes, D.Sc., M.D., has also been received from the Institute.

Mr. C. E. Benton has contributed an article entitled "The Architecture of Home-making" to the *Engineering Magazine* for July (vol. xi. No. 4), received from the publisher. Mr. W. Griggs has forwarded Nos. 54 and 55 of *The Journal of Indian Art and Industry*; the contents of the first number being "The Manufacture of Brass "and Copper Wares in Assam" (with eight full-page plates), and "The Manufacture of Pottery in "Assam," by E. A. Gait; and "The Leather "Industry of the Punjab," by Arthur J. Grant, with ten full-page plates. Mr. John Griffiths contributes to the later number an article on "The "Brass and Copper Wares of the Bombay Presidency," illustrated by nineteen full-page plates.

#### The Library and the Vacation.

The concluding sentence of the paragraph in the JOURNAL [p. 474] notifying the new regulation of the Council respecting the hours of closing the Library needs a slight correction. The Reference Library is to be closed during the whole of the month of August—from Saturday the 1st to Monday the 31st, both inclusive. During this period the Loan Library will be served in the Clerk's office between the hours of 12 noon and 2 p.m. daily.

### REVIEWS. XLIV.

(120)

#### JAPANESE DECORATIVE ART.

*The Book of Delightful and Strange Designs, being one hundred facsimile illustrations of the art of the Japanese stencil-cutter, to which the gentle reader is introduced by one Andrew Tuer, F.S.A., who knows nothing at all about it.* 4o. 1892. Price 6s. London: The Leadenhall Press, 50, Leadenhall Street, E.C. London, Paris, and Yokohama: Liberty & Co. New York: Charles Scribners' Sons. Paris: Baudry et Cie. Leipzig: Brockhaus.

*Stencils of Old Japan, from originals in the collection of Ernest Hart, D.C.L., Member of the Japan Society. With an Introductory Note.* Fo. Lond. 1895. Price 21s. [Messrs. J. S. Virtue & Co., Limited, 26, Ivy Lane, Paternoster Row.]

These two works bring before our notice another phase of the artistic skill of the Japanese, and are

to the decorative artist of immense value, opening up possibilities hitherto undreamt of by European artists; and our thanks are due to Mr. Andrew Tuer and Mr. Ernest Hart for the interesting books, containing so many beautiful examples of stencil-design, and much information upon the methods employed by these skilful and ingenious people.

The method adopted is this, in a few words: the artist draws the design—if it be a freehand one—with his brush upon a tough and yet thin specially prepared paper, by which he gains greater freedom than would be the case if he used the pencil, as a European artist. He works apparently as if his design were not for stencil; the limits of the stencil he leaves to the cutting of the plate. If the design be geometrical, it is so set out with a point, which makes an indent upon the paper, and he then cuts out those parts which will express it. When the design is ready as many plates of the same kind of prepared paper as can conveniently be cut are placed one below the other and held securely in position. Then, with a sharp pointed knife, and sometimes punches of various sizes, the artist proceeds to cut or punch through the whole thickness of papers with a skill, precision, and freedom which are charming and perfectly marvellous, varying from the simplest design to the most intricate; from boldness of parts to an extraordinary fineness, and with that intuitive knowledge of design which only a long apprenticeship can give. The plates—being cut or punched all at the same time—fit one another exactly, and are now ready for use.

But as the Japanese have raised stencilling to a fine art, yet another process is made use of; so far their method varies little from European use. Some of the designs are extremely intricate and of great fineness of parts, so that without leaving innumerable "ties," which—as every practical decorator knows—limit his use of stencil-plates to simple patterns only, the Japanese has hit upon an exceedingly simple plan: he spreads over one plate an open network of fine silk, with a mesh of about a quarter of an inch, sometimes using them in squares, at others diagonally. The plate is prepared with some adhesive material which holds this network securely, and then another of the stencil plates is placed over the one on which the network is, and the two are then securely pasted together—care being taken that the plates fit with exactness. An examination of the plate so prepared reveals the whole secret, and is an instance of the deftness with which the artist works.

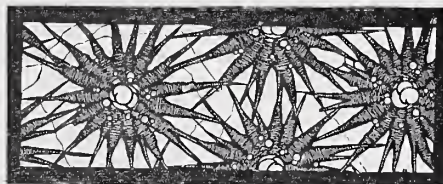
But stencilling is employed for coloured work also, and the plan adopted is similar to printing in colour with us—that is to say, only that part of the design which is to be in a particular colour is cut out in the stencil-plate, a separate plate being used for each colour. All their printing of

textile fabrics is done with stencil-plates ; printing, as with us, is not practised by them.

Mr. Tuer has bound up as the frontispiece of the first issue of his book an original specimen of a Japanese stencil ; a very happy idea, and of great practical use ; and he prints what he has to say about the subject in English, French, and German. He represents the plate in colours like the material employed by the Japanese, leaving the parts cut out the colour of the ground. The illustrations are taken from the plates themselves, adding to the value. The examples here given, reproduced to a small scale, will suffice to whet the appetite of those who have not yet made themselves acquainted with this phase of Japanese art.

Under the skilful hands of the Japanese, wonderful effects can be produced by this method of decoration. With the intuitive feeling of an artist, he knows how to heighten or lower the colour he is using, and to blend them with cunning, putting in here and there by hand any part he wishes to emphasise, and producing a delightful whole, with an absence of mechanical effect.

The art of this nation of ornamentalists is the outcome of centuries ; their surroundings are in sympathy, their climate and flora beautiful, their artistic power as a nation unique. With a precision that a Greek might envy, they employ the brush, and, like the Greek, every article they manufacture or have in daily use carries with it



DESIGNS REDUCED FROM THE FACSIMILE ILLUSTRATIONS IN MR. TUER'S BOOK.

Mr. Hart entitles his work "Stencils of Old Japan." Why *old* is not so clear, as they are taken from plates in use at the present day, though stencilling has been employed by the Japanese for some centuries past. Mrs. Ernest Hart contributes information upon the *modus operandi*, and writes with an artist's enthusiasm for the work of this artistic nation. The designs are produced from the plates, as they would appear stencilled upon the material, and have not, from the decorator's point of view, the same practical value as is the case with those given by Mr. Tuer. Still, they are a valuable contribution to our knowledge of Japanese design, and form a rich addition to the decorator's library.

that indescribable character of design and fitness which can only spring from a people highly endowed with artistic instincts. Alas ! that European influence should come and teach this art-loving people to adopt other fashions and ways. Already our markets are swamped with Japanese goods manufactured and adapted to European tastes, inferior to those formerly in use in both design and quality. They adopt our habits and costume, follow our customs, and imitate our fashions. This, in the march of events, is perhaps inevitable with a clever and ambitious nation, but the loss of skill and individuality is deplorable.

These two delightful books have, as has been



before remarked, distinct value and teaching to us all, and the decorative artist in particular.

COLE A. ADAMS.

(121)

### SYMBOLISM IN ARCHITECTURE.

*Animal Symbolism in Ecclesiastical Architecture.* By E. P. Evans. With a bibliography and seventy-eight illustrations. 8o. Lond. 1896. Price 9s. [William Heinemann, 21, Bedford Street, Covent Garden, W.C.]

We have here presented to us in a well-printed book an elaborate account of the animal symbolism to be found in ancient churches, together with an interesting explanation of *motif* and meaning of much that is at the present day incomprehensible to the ordinary Churchman. Even fictitious animals, such as sphinxes, centaurs, minotaurs, fawns, satyrs, dragons, and every species of nondescript, will be found pressed into the service of the Church. The symbolism was full of life and meaning to those for whom it was first intended, when brought before them by the instructors of the people, by way of hermeneutical or interpretative teaching.

The scope of the work extends very far beyond the limits of symbolical representations to be discovered in ecclesiastical architecture, or to be employed by us. It is an interesting and readable book for the ordinary reader, but it aims at being much more than this. It bids fair to become a standard work, with its copious index containing upwards of a thousand references to its 340 pages; and with its list of nearly eighty writers or works consulted. Very few of these or of the illustrations are English.

The historical and illustrative aspects of the subject are treated of, rather than the ethical, which, however, are kept well in view historically. Yet the author fails to recognise the ethos of symbolism as an essential element in human nature, without which man cannot realise the mysterious connection of soul with body, of the seen with the unseen, of the temporal with the eternal, and without which sentiment becomes mere sentimentalism. He introduces St. Paul's teaching that "the invisible things of Him [God] from the creation of the world are clearly seen, being understood by the things that are made," but the doctrine indicated does not seem to be cordially accepted by him; for he looks upon this doctrine merely as a piece of patristic theology. The fathers thought that the physical world was—as it really would appear to have been—*intended* for a symbol of spiritual truth, to enable man to realise the nature of things unseen; and it would naturally, if not necessarily, come to be used for the purposes of spiritual exegesis and education. The author, therefore, of course naturally treats symbolism from its historical, illustrative, and incidental side, rather than as one of the elements common to the exercise of all religions, whether heathen, mythological, and secular, or Patriarchal, Mosaic, and Christian. He traces its universal principles

and applications through all nations and ages of the world, from the earliest origin of Oriental religion—in the worship of the Persian sun-god, in Buddhism, ancient Oriental literature, Egyptian esoteric science and history, Greek mythology and literature, Rabbinical interpretation of the Old Testament scriptures, down to the Christian Church itself. Thus, then, we are brought to see that the Church received and applied to her own use (as did the Israelites of old the spoil of the Egyptians at the time of their exodus) the hermeneutical traditions of the whole world, so far as they were available and applicable to Christian art and Christian worship.

The author has no doubt that "the Orient is the chief source of our symbolisms, which in migrating westward have undergone such a variety of transformations and adaptations as in many cases greatly to obscure their original significance." He says "nothing was more common in the Middle Ages than the Christianisation of pagan deities," of which he gives various examples; and he adds: "It is quite certain that many ornamentations of Christian architecture, which are now merely traditional and conventional forms, and perform a purely decorative function, might be traced to Egyptian and other Oriental sources, where they had distinct significance as signs and symbols." And he claims the Jewish philosopher, Philo, as a mediator between Hebrew and Hellenic culture, on the ground that he endeavoured to discover the teachings of Pythagoras, Plato, and Aristotle esoterically concealed in the Mosaic records.

Although "animal" symbolism is the title of the volume, the properties and significance of precious stones and other natural objects receive their due recognition. The author's great sources of information on the subject are the *Claves Scripturæ Sacræ* and the *Physiologus*. He tells us that the *Physiologus* was the compilation of an Alexandrian Greek, early in the fifth century, and that it has been translated and re-translated at various periods and into various languages, including Latin, Ethiopic, Arabic, Armenian, Syriac, Anglo-Saxon, Icelandic, Spanish, Italian, Provençal, and all the principal dialects of the Germanic and Romanic tongues. It purports to be a summary of natural history, but, instead of giving any detailed account of the structure of an animal, such as would form an essential element in all natural history at the present day, it is filled with their supposed or fabled characteristics and habits, and forms a convenient "compendium which served as a manual of instruction for zoology and botany, with moral reflections, so as to include also the province of ethics." He remarks further that the "natural history of Pliny is an encyclopedic compilation of current tradition and popular superstition."

In some periods of the Christian Church the *Physiologus* was largely used for spiritual exegesis;

at other times it was condemned as heretical, profane, and superstitious. It served for some centuries for the pictorial illustrations of missals and other books of devotion. But at times came the intermingling of exegesis with coarse fable, satire, and parody of religious rites within the church itself, when "the bishops preferred to throw open "their cathedrals to the crowd, and to permit "such jollities within the consecrated walls," rather than lose their influence over the people. It is not easy to understand a condition of society or of religion which could allow the performance in Christian churches of burlesques of sacred subjects, even with the explanation given by our author, that the clergy considered it safer and better to endeavour by such entertainments to retain a hold over an illiterate people in a way that could be appreciated by them, rather than leave them to seek their own amusements in more objectionable ways, perhaps in open turbulence and sedition.

Thus it was, however; and we learn that they originated and celebrated such festivals as the Feast of Fools, and of Innocents, and the Ass's Feast, of which a full account of the rites is given, together with the "Ass's Litany," its translation from the Latin and French refrain, and its interpretation. "An ass, caparisoned with cope and "other sacerdotal apparel, was met at the principal "entrance of the church by the canons and other "clergy; and conducted up the nave into the "chancel, where the function was performed in "a harsh, braying tone." We are subsequently told how that Mediæval monks and ecclesiastics were neither thin-skinned nor dainty-minded, indulging in the coarsest jokes, even when they were made "at the expense of their cloth." Of this nature were some of the official seals of ecclesiastics. The seal of the Bishop of Pinon in Picardie was an ape in episcopal robes, with crozier and mitre (1285-1309). It would seem to be very possible that the teaching to be conveyed by such devices was intended to enhance the value of their spiritual authority in the Church. They were quite ready (whether in reality or only in pretence) to sacrifice their own personal dignity and pride, being still invested with the regalia of their spiritual power. Such devices at the present day would invest their persons with anything but honour and respect. Then we find numerous illustrations from ecclesiastical carvings and other decorative work representing all sorts of grotesque pranks of apes, foxes, dogs, geese, monks, nuns, unicorns, "intended to enforce moral lessons, or "to illustrate the wisdom of homely proverbs." Our author concludes that though such representations may have been the invention of the artist, they must have been introduced with the will and consent of the ecclesiastical authorities, whose intention was evidently to censure by burlesquing the vices and foibles of the day, adding that what

is "most curious and characteristic is that satirical, and often obscene, delineations of this kind, "although designed for moral reproof and correction, should have been deemed suitable decoration of sacred architecture."

Then the morality plays and the acted burlesques in church must in like manner fall under the same censure. The dramatic art, like painting, music, poetry, sculpture, and even architecture itself, is a noble and legitimate, and indeed a valuable, means of education and edification, not to be misused or abused, but to be reformed, cultivated, and refined. It is little to be wondered at that at the time of Shakespeare the theatre had come to be regarded as low and vulgar, and that dramatic entertainments of any sort should be made to bear the odium, rather than the general ignorance, and degradation of society at large, which eventually led to a revulsion of feeling and a large resuscitation of literature, morals, and religion during the reign of Elizabeth.

From time to time, however, these burlesques and irreverent fables were protested against, sometimes with the severest rebuke, sometimes with the coarsest satire. And such was the satire of John Heywood in Elizabeth's day. He is termed "an earnest Catholic and a staunch Papist," and he wrote plays to expose the frauds of the preaching friars as vendors of saints' bones and other relics. His own satire is not free from profanity—wherein we must pronounce the remedy to be worse than the disease—when he makes one of his characters offer for sale "the great toe of the "Trinity," thus bringing within the scope of levity and ridicule a profound and sublime mystery of Christianity itself.

We must bear in mind that the general conditions of society in those days were totally different from those of our own day. Instead of an age teeming with literature and the wholesale diffusion of knowledge, all but a few cultured persons were wholly dependent upon the teaching of the clergy, half educated and commonly low-born; and it was a necessity of the times that instruction should be given and impressions made through pictures and other visible objects. The truth expressed by Horace, in his oft-quoted verse, is equally applicable to our own day:—

*Segnius irritant animos demissa per aures,  
Quam quæ sunt oculis subjecta fidelibus, et quæ  
Ipse sibi tradit spectator.*

And much of the symbolical representation that may seem to our minds gross and inapplicable may then have been taken as forcibly suggestive of the idea to be conveyed, and have made a strong impression, apart from the rude mode in which it would be illustrated.

Ridicule may at times touch the self-conceit of some whom the voice of the preacher cannot reach. But to the cultured and refined mind all ignoble representations of sacred subjects are pro-



fane. Like coarse and low social jokes, they may be entertaining to some, but very far from edifying or pleasing to others. Many persons have formulated a notion that we ought to eschew symbolism, that we should have nothing to do with it, that in our churches it is nothing more than sentimental mysticism. There is, however, a higher and truer principle to be followed in its study and use. We can form no definite notion even of natural life itself, still less of eternal life, but through ideas suggested by the bodily senses. "The visible creation is an image of the invisible" and a mirror of spiritual truth." The history of symbolism is coextensive with the history of the world and with the history of language. All language has in its very nature the "representative quality" to be found in that which has to be represented and conveyed to the mind or transmitted to others. Indeed, our only mode of free intercommunication with others is through external visible things, through language built up of signs and symbols representing the qualities of created objects. Much, therefore, as we may lament their aberrations, we must admit that the Mediæval monks and Mediæval architects were fully justified in following out, and elaborating into minute detail, in the architectural forms of the material fabric, the architectural and physiological teaching suggested by St. Paul when he speaks of himself "as of a wise master builder" "laying a good foundation," and of the brethren as "the whole body fitly joined together"; and by St. Peter when he terms them "lively stones" "built up a spiritual house." And symbolism is a valuable element in ecclesiastical architecture. Until within living memory painting and sculpture, together with parable, poetry, and symbolism, had been banished for centuries from our churches. Nothing was left either of instructive or attractive interest. With the decadence of the architecture all its accessories disappeared. All that remained was the barest utilitarianism.

That our author does not encourage any false or fanciful ideas of symbolical representations is clear from his reference to the work of Durand, the great teacher of the *Rationale* of the divine offices in the Middle Ages, as one who "makes" "every portion of the church edifice full of symbolic significance"; for he goes on to remark: "Such are a few specimens of the subtilties and trivialities of mediæval and modern symbolologists, which suffice to illustrate the general tendency of their speculations, and the excess of abstrusity and absurdity to which they carried their queer conceits." He says Durand gives "free rein to his fancy, and discovers mystic meanings in the structure, of which the architect had not the faintest presentiment." Certainly it is by no means difficult to find instances of this in Durand (1459), who, after speaking of the exaltation of the chancel for the divine offices,

which is usually ascended by steps, goes on to observe that some prefer to go down steps into the chancel in order to denote the superior humility which should reside in the clergy. It is pretty clear that in this case at least the symbolism was an afterthought. It was invented to account for the fact, this arrangement really having been suggested by the natural fall of the ground towards the east. But this is somewhat outside the subject of the "animal" symbolism, on which, however, Durand is not altogether silent, having (in lib. vii.) a chapter on the types or emblems of the Evangelists.

WILLIAM WHITE, F.S.A.

(122)

## THE OLD ROMAN WALL.

*The Handbook to the Roman Wall.* By the late J. Collingwood Bruce, LL.D., D.C.L., F.S.A. Fourth edition. Edited by Robert Blair, F.S.A. Sm. 8o. Lond. & Newcastle-upon-Tyne, 1896. Price 5s. [Messrs. Longmans, Green, & Co., Paternoster Row, London; Messrs. Andrew Reid & Co., Limited, Printing-court Buildings, Newcastle-upon-Tyne.]

When in 1864 Charles Kingsley visited the South of France, he saw everywhere traces of the old Roman civilisation, and gave vent to his admiration in those charming letters to his children which have happily been published. Writing from Avignon he says: "We saw to-day the most wonderful Roman remains. But the remarkable thing was the Roman ladies' bath in a fountain bursting up out of the rock, where, under colonnades, they walked about in or out of the water as they chose. Honour to those Romans! With all their sins they were the cleanest people the world has ever seen."

That is, indeed, a true judgment. The Romans were clean in more ways than one. Their mission was, as Dr. Bruce rightly says, to bring all the nations of the then known world into unity, and spread the blessings of order and civilisation to the very ends of the earth. I do not mean to contest that the people of England are in that respect the successors of the Romans, although it might be argued that, if England has spread the advantage of a well-organised government and the blessings of Christianity over continents of the existence of which Cæsar never dreamt, she was moved by a different spirit, and used other means of conquest.

The Roman invasions into Britain constitute one of the most remarkable periods of British history. Appianus of Alexandria writes: "The Romans have penetrated into Britain and taken possession of the greater and better part of the island; but they do not desire the rest, because that which they already possess is not of the slightest benefit to them." And yet the Romans subdued the greater part of the country, where, as has truly been said, they remained from first to last an army of occupation among a hostile people.

However, it is curious to note that not a few of their institutions are still in existence. From the Romans London received municipal institutions which have endured in their main features to the present day. The remains of their architecture are numerous, although not as perfect as those which can be seen on the Continent.

The most interesting of the remains in Britain is the Roman Wall, which reaches across the narrow part of the island in Northumberland and Cumberland, commencing at Wallsend on the Tyne, running through Newcastle, which was the second station on the line, and Carlisle, and terminating at Bowness, in Cumberland, now a quiet seaside resort.

None has described the Roman Wall more fully and with a truer archaeological instinct than the late Rev. Dr. J. Collingwood Bruce, whose *Handbook* has reached a fourth edition, ably revised by a distinguished antiquary, Mr. Robert Blair. It is impossible to read this book without agreeing with Dr. Bruce, when he says that the wall and the vallum by which it is accompanied are perhaps the most perfect monuments of the skill of the Romans as military engineers. Not only did they build that wall with, at almost regular intervals, its stationary camps and its mile castles, but they provided the country with that remarkable system of roads, traces of which are still extant, and raised those camps which testify to that true military spirit which induced them to go step by step in their work of conquest, always guarding, even when their stay was to be brief, against possible dangers. Agricola is represented by Tacitus as saying: "With me it has long been a settled opinion that the back of a general or his army is never safe."

It is very much to be regretted that this great structure should in too many places be yielding to the adverse influences of nature and man. We see there another argument in favour of those who maintain that, against man at least, this country should be armed by laws for the protection of her historical monuments. Referring to that decay, Dr. Bruce begs his readers to consider that he has written of things as they are, not as they may eventually be.

The *Handbook* forms an admirable guide to tourists traversing the barrier of the lower isthmus. The style is easy, always entertaining; the science is indisputable, but free from dryness. Dr. Bruce follows his subject step by step. He brings very strong arguments to sustain his contention that the wall and the vallum do not belong to two different periods, but must be considered as forming part of the great engineering work of Hadrian, although Severus most likely repaired it and set it to order. Desirous of making the pilgrimage to the old Roman work as easy as possible, Dr. Bruce gives an appendix, in which excursions are planned, and the places where the traveller can obtain food and rest are considerably pointed

out. Nothing but praise should be bestowed upon a book in which the author has undoubtedly given us the best of himself. A. BARTHÉLEMY.

(123)

## ARCHÆOLOGICAL SURVEY OF INDIA.

*Progress Report of the Archæological Survey of Western India. For the months May 1894 to August 1895. By Henry Cousens, Superintendent Archæological Survey, Government of Bombay.*

This *Progress Report*, which has been received from the India Office, gives details of a tour made by the Superintendent of the Archæological Survey of Western India. The *Report* records particulars of the "office work" done between the dates mentioned; but the chief interest of its pages will be found in the notices of places visited during the tour. The route followed began at Aurangabad, whence Mr. Cousens went in a south-eastern line, visiting Aunda, Nander, Nirmal, and Indur, and on to Karimnagar and Wrangal; from the last-named place he turned south-west to Hyderabad, and then by Gulbarga the party returned to Poona. The journey lasted from 3rd December 1894 to the 16th May 1895, and the time implies that a large extent of ground had been covered: this was in the Nizam's territory, and through a region where the architectural remains have not as yet received much attention. The reason for this is, that it is not a district often visited by Europeans, because there is no important line of communication passing through it. In his *Indian and Eastern Architecture* Fergusson describes the Nizam's country as "*terra-incognita* to us, as far as architecture is concerned" [p. 387]. Dr. Burgess made a tour in 1875-76, on a line parallel, but to the south of that followed by Mr. Cousens, the results of which were published in vol. iii. of the *Archæological Survey of Western India*.

No "find" that can be called remarkable is recorded in the report of the tour; but it would be difficult to travel far in India without coming upon some architectural remains of interest, and the matter contained in the present document is no exception to this rule. Ten miles south-east of Indur there is a small village called Bichpalli. Here Mr. Cousens found an old ruined stone temple, in the Dravidian style, with an open *pradakshina* round the shrine. Known temples of this kind are rare; the two we are most familiar with are those at Aiwulli and Pittadkul, first noticed and described by Dr. Burgess.\* The interest attached to Dravidian temples of this character is derived from their probable development from a temple like the Buddhist Chaitya Cave, or from some temple very closely allied to it in arrangement. The *pradakshina* will be better understood by describing it as a procession path,

\* *Archæological Survey of Western India*, vol. ii. Notices of these temples, with illustrations, will be found in *Indian and Eastern Architecture*, pp. 219, 221, 438.—W. S.



for the worshippers to circumambulate the shrine, in the same way as the Buddhists circumambulated Stūpas and Chaityas. This form of ritual did not originate with the Buddhists; it was practised by the Brahmins in almost all their ceremonies ages before Buddha appeared.

Mr. Cousens describes many of the temples as being constructed with granite; but still many were of brick, the bricks being moulded to suit the lines of the style. He believes that all the earlier temples were built wholly of brick, and that that material succeeded wood, and was prevalent before stone came into use. We now know that brick was also largely employed at an early period along the line of the Ganges, and probably the same succession of materials took place there as that which Mr. Cousens supposes occurred in the Dakhan. This should not be overlooked in speculations regarding the origin and development of Indian architecture. Previously it has generally been assumed that the transition had been direct from wood to stone; but if brick came in between, it is possible that it might in many ways have left its influence on the constructive forms of the period.

Near the village of Singapur, on the way from Karinnagar to Hanam Konda, there is a considerable area covered with stone circles; the larger circles are thirty to thirty-five feet in diameter, and are formed of great rough boulders, thirteen to fifteen being in each ring. Remains of dolmens exist in the middle of some of the circles. Mr. Cousens pronounces them to be undoubtedly prehistoric burying-places.

A new railway is to be constructed from Hyderabad to Ankaï, and as this will be over part of the ground lately surveyed, Mr. Cousens expresses great fear of the railway contractors, who look upon architectural remains as having been wisely arranged by Providence for their special benefit. The Public Works Department was of old the great sinner in this direction; now, in Bengal at least, that body has the preservation of ancient monuments as one of its functions. Converting a thief into a policeman is not a new thing in this world of ours. Is there no hope of the same kind from the railway contractor? Could he not be changed into an archæologist? If the plan succeeded with the Public Works Department, it might also succeed with the contractors.

WM. SIMPSON.

(124)

## ELY CATHEDRAL.

### ICONOGRAPHY OF THE LADY CHAPEL.

*The Sculptures in the Lady Chapel at Ely. Illustrated in fifty-five colotype plates. With Descriptions and Identifications by Montague Rhodes James, Litt.D., Fellow and Dean of King's College, Cambridge; and a Preface by the Lord Bishop of the Diocese. 40. Lond. 1895. Price 25s. [D. Nutt, 270-72, Strand.]*

Fascinating as the subject ought to be to every Englishman, it is a curious thing that, with the

solitary exception of the late Professor Cockerell's useful *Iconography of the West Front of Wells Cathedral*, there does not appear to be any independent and satisfactory work on the architectural sculpture of our forefathers in the Middle Ages. Collections of sepulchral effigies there are, it is true, in plenty, and some of them are of great value; but of the symbolical, historical, and legendary figures more intimately associated with the original design of our churches, we have only the isolated illustrations and descriptions which may be found scattered here and there among the pages of general accounts of buildings, or buried in the comparative obscurity of the back numbers of serial publications. It is therefore most fortunate that before it is quite too late so well-equipped and accurate a scholar as Dr. Montague James should have been moved to work in this strangely neglected and continually narrowing field, and we have the fruit of his first labours in this very careful and practically exhaustive monograph of the sculptures of the interior wall-arcades of the Lady Chapel of Ely Cathedral. This exquisite chapel (called also, from its parochial use, the Church of the Holy Trinity) was built and finished between A.D. 1321 and 1349, and, taking it altogether, is perhaps the finest and purest work which still remains to us of that lovely and too short-lived phase of English architecture, the Curvilinear-Gothic. Well known as, in a general way, the chapel certainly is, it has yet never been worthily illustrated, nor has any serious attempt been made to decipher and explain its marvellous wealth of carved and painted imagery. (Among the numerous appendices to Professor Cockerell's book, on sculptures in other cathedrals, no mention is made of this work at Ely.)

Dr. James modestly disclaims any intention of publishing a complete account of the Lady Chapel, and strictly confines himself to the task of elucidating the iconography of the arcades which adorn the lower part of the walls of all four sides of the chapel. Yet these alone have yielded him material for an exceedingly interesting and instructive volume: a guide which will become indispensable to every student and lover of English art.

The book consists of a general introduction and a large series of photographs, each one accompanied by brief explanatory notes. In the introduction Dr. James discusses fully, but not at undue length, the character and meaning of the general scheme and of the individual groups and figures, and gives besides a great deal of original and important information concerning the sources from which the sculptors may be supposed to have derived their knowledge and inspiration. Dr. James has made a special study of the written versions of the legendary history of the Virgin Mary which were in use among Mediæval artists, and without such knowledge most of these Ely sculptures, from their sadly defaced condition, would have still

remained unintelligible. The illustrations, which are collotypic prints, are uniform in size and approximate scale, and are well chosen for their purpose and carefully executed; with their aid something of the effect of the originals in their present state can be realised, although the remains which even now exist of colour and gilding have still to be imagined.

If it were only for thus securing an authentic and permanent record of these scanty, but precious remains of so much lost beauty, we should owe Dr. James a large debt of gratitude; but the value of his work goes far beyond that of mere accurate description. His successful interpretation of the greater number of the subjects represented brings us face to face with the minds and beliefs of the men who wrought these and many others like them in a wonderfully vivid manner, and throws new light around in many directions. But the difficulties have been great, and could only have been overcome by arduous and zealous labour, aided by keen powers of observation and comparison and a fund of exceptional knowledge, reinforced occasionally by that faculty of making brilliant guesses at truth which is so necessary for a constructive archaeologist.

As regards the sculptures themselves Dr. James seems almost to have said the last word, but so far he has only given us an account of them without reference to the building of which they form an integral portion, and which is in its every detail thoroughly representative of the artistic motives of the time, and well worth an abiding memorial. Dr. James has begun so well that it is much to be hoped that he may be impelled to extend his work to embrace the whole chapel. To make the description complete there are wanted general views and geometrical drawings, both to show the arcades in relation to their environment, and to place on record together with them (in what might suitably form another volume of the same work) those other features, such as the tracery of the windows, which all have their part in giving to the building its special character and charm.

ARTHUR S. FLOWER.

## NOTES, QUERIES, AND REPLIES.

### *The Holborn-Strand Improvement* [p. 434].

From the HON. SECRETARIES of the Art Standing Committee—

In view of the importance of the above matter the Institute may desire to know the steps that have been taken since the publication of the annual report of the Art Standing Committee.

The report and plan of the Art Committee were sent to the Improvements Committee of the London County Council on the 15th January 1896. This Committee caused some slight modifications to be made in the plan by their officers, and reported

to the London Council on the 10th March that the cost of the scheme as modified would be £2,035,500. They recommended a modification of their original scheme at a net cost of £2,135,500.

Their recommendation was not adopted by the Council, and on the 21st April a new Improvements Committee, elected in the interval, asked permission to withdraw the recommendation of their predecessors. This request was granted by the Council.

The matter once more becoming an open question, the Art Committee appointed a deputation to wait upon the Chairman of the new Improvements Committee to explain the merits of the Institute scheme. This deputation was courteously received, and the Chairman went fully into the proposals, and stated that they were favourably regarded by him. He could not say what views his Committee might take.

On the 29th May the Chairman of the Improvements Committee asked to be favoured with a further interview by the deputation. At this interview he explained that his Committee were not then prepared to do more than recommend the widening of the Strand between the churches of St. Mary-le-Strand and St. Clement Danes. He asked the deputation how a proposal to remove the two churches would be received by the Institute. The deputation strongly urged him to protect the churches at all costs, and stated that in so doing he would receive the support of the Institute and of other architectural bodies. To emphasise their view, the deputation, at his request, forwarded to the Improvements Committee a copy of the recently published work, *London Churches of the Seventeenth and Eighteenth Centuries*.

On the 9th June the Improvements Committee recommended the Council to remove the buildings south of Holywell Street at a net cost of £569,130.

An amendment to this recommendation advocating the removal of the churches was moved in the Council, but was opposed by the Chairman of the Improvements Committee and lost by 15 votes. A further amendment advocating a more extended scheme was carried, but lost on its being put as the substantive resolution. The matter thereby dropped.

A new element was now introduced into the discussion by a report of the Establishment Committee of the Council recommending the acquisition of two acres of land at the south side of Trafalgar Square as a site for the County Hall. The report indicating that the Institute scheme had not been considered by this Committee, the Art Committee felt it necessary to draw public attention to the proposals of the Institute. This was done in a letter to *The Times*, signed on behalf of the Committee by their Chairman and Secretary, and which appeared on the 30th June. At the discussion at the Council on the same day the



letter was referred to, and the debate was adjourned on the motion of Mr. Boulnois, M.P. On the 6th July Mr. Alderman Beachcroft, the Deputy Chairman of the London County Council, replied in *The Times* to the letter of the Art Committee, stating that the estimated cost of the new street on the lines of the Institute scheme *plus* the site for a County Hall would be, not £2,035,000 but nearly £3,500,000, and expressed the view that it would be a fatal mistake to combine the proposals for a County Hall and the new street. On the 13th July the Chairman and Secretary of the Art Committee addressed a further letter to *The Times* analysing Mr. Beachcroft's figures, and pointing out that there were really five separate undertakings contemplated by the Council, viz. —

- (1) Removal of south side of Holywell Street;
- (2) Widening of north side of Strand;
- (3) New street between Holborn and Strand;
- (4) Site for new County Hall;
- (5) Future extension of County Hall site.

Messrs. Waterhouse and Mountford showed that the Institute scheme solved all these problems in one coherent and comprehensive architectural scheme, which would be gradually worked out, and which might ultimately prove less costly, and would certainly prove more efficient and more worthy of London, than the temporary expedients suggested. The views of the Art Committee were supported in *The Times* by the President of the Architectural Association.

On the following day Mr. Boulnois, M.P., opened the debate at the Council by referring to this discussion in *The Times*, and stated that he did not think the matter had received the adequate consideration of the Council. This view was supported by the Earl of Dunraven and others. Mr. Boulnois moved, and Mr. Chapman seconded, that the whole question be referred to a Select Committee composed of members of the Establishment, Improvements, and Finance Committees. This resolution was not carried, and other considerations intervening, the Trafalgar Square site was carried by a majority of 18 in a Council of 110, an amendment substituting the words "County Council Offices" for the words "County Hall" having previously been adopted.

The decision of the Council aroused considerable comment in the press. *The Times* in a leading article in its issue of the 15th July referred to the Institute scheme, and stated that it would have been reasonable to consider why the straitened area that was available at Spring Gardens was to be chosen in preference to others which were, it was argued, cheaper, more convenient, and more capable of enlargement if necessary. "It does not seem," continued *The Times*, "from the debate in the Council which came to an end yesterday that due consideration has been given to the subject. . . . We hope it is not too late for public opinion to compel the postpone-

"ment of an extravagant and ill-considered policy, which is, in some respects, more objectionable than that which was abandoned owing to the influence of Lord Rosebery some three years ago."

On the 21st July the Chairman of the Council, in his Annual Address, stated that there was much misunderstanding as to the Charing Cross site. He assumed, as a matter of certainty, that the Council had in view the letting of the ground and basement floors on the Trafalgar Square side for commercial offices—in fact, for the replacement of those who would be displaced—and would have no entry to the offices except on the Park front. Those commercial offices would produce an estimated rental of £12,500 a year, equal at 2½ per cent. to a capital sum of £500,000. There would remain ample space for the Council's offices, with facilities to the westward for any desired increase.

In the meantime the Improvements Committee have again brought forward their proposals for the removal of the houses on the south side of Holywell Street, and their recommendation was adopted by the Council on the 21st July. Two of the five undertakings referred to by Messrs. Waterhouse and Mountford have thus been approved, at a total net cost of £1,382,130.

#### The late Professor Curtius of Berlin.

From ALEX. S. MURRAY [H.A.], LL.D., F.S.A.—

The death of Geheimrath Professor Ernst Curtius, which took place at Berlin on Saturday, the 11th July, in his 82nd year, is the loss of a dear and much loved friend to many in this country. His genial and kindly personality, his bright imagination, his enthusiasm and wide sympathy with every intellectual effort, exercised a fascination on all who had the good fortune to know him, and of such their name is legion. These will cherish his memory to the end. His life was happy as well as long. He had a congenial position as Director of Antiquities in the Museum of Berlin. As a professor in the University he had always a delighted audience of students. In his home he and Madame Curtius, his kindly and accomplished wife, were surrounded by friends, to whom their society was an unfailing charm.

In the preface to his book on Athens (*Stadtgeschichte von Athen*), issued as recently as 1891, Curtius speaks of the advantage it had been to him to spend several of his youthful years in Athens and its neighbourhood under the enchantment of Nature and Art. From that time Athens was always present to his mind. From the modest memoir on the Acropolis, published in 1844, to the *Stadtgeschichte*, just mentioned, he had gone on for nearly fifty years collecting materials about Athens. It was, however, as an historian, rather than an archæologist, that he chose his materials. He wanted new maps, and himself assisted largely in constructing them, always acknowledging most

cordially the splendid services to the topography of Attica which had been rendered by our countryman, Col. W. M. Leake. He wanted more excavations, because every fresh discovery increased the vividness of the picture of ancient Greece on his mind.

The thought of Olympia with its buried treasures, which the French had once begun to explore and then abandoned, fired his enthusiasm, and so great was his personal influence that the German Government took up his scheme, with results, both as regards sculpture and architecture, which will always be associated with his name. He was frequently present himself at these excavations when he could escape from his duties in Berlin. Eyewitnesses speak of the wild delight which took possession of every one when, on these occasions, he suddenly appeared on the scene; and when, little more than a year ago, a portrait bust of him was placed in the museum at Olympia, it was no wonder that many gathered to the ceremony. His history of Greece was written previous to the exciting events of Olympia. It was the youthful years which he had spent in Greece that gave the bright colour to that book and secured its success. But no success ever elated him. He was the last man to measure himself against Grote, for whom indeed his admiration was intense.

Artistic insight was not a strong point with him. He was not a specialist in art. But he was a warm admirer of Greek sculpture, and no one rejoiced more than he as year after year the excavations at Olympia brought to light fresh examples of it. As an historian he saw in the fine array of statues there recovered a new chapter in the artistic activity of the Greeks, but it was only a chapter side by side with others in which the unsurpassed achievements of the Greeks in poetry, painting, architecture, history, and philosophy were recorded. He could well leave to others the analysis and description of the sculptures as they are given in the *Ergebnisse der Ausgrabungen* under his own editorship, jointly with that of Professor Adler, the architect. Vols. i. and ii., dealing with the buildings of Olympia, appeared in 1890; in the same year vol. iv., containing the bronzes and smaller objects, by Professor Furtwängler; and in 1895 the first part of vol. iii., dealing with the sculptures, whether in stone or in terra-cotta. This is by Professor Treu, under whose superintendence much of the work at Olympia was conducted. Those volumes are superseding the original folios, consisting chiefly of photographs, which were issued in the course of the excavations. But in our admiration of the new volumes we must not forget the intense gratitude in which all shared towards Curtius and his colleagues for the promptness with which everything of importance was photographed and submitted to the public, without any waiting for elaborate treatises, as is too often the case in matters of the kind.

On questions of Greek architecture Curtius seldom interfered. The one thing on which he had decided views was the hypæthral temple. Yet, judging from the Paper by him on this subject which appeared in the JOURNAL for November 1893 [Vol. I. 3rd Series, p. 80], it cannot be said that he contributed anything decisive on this still academic dispute.

#### Public Buildings in France under the First Empire.

From JOHN HEBB [F.]—

*L'Ami des Monuments et des Arts*, which is edited by M. Charles Normand, a son of M. Normand [*Hon. Corr. M.*], recently published a selection from a manuscript diary kept by Vaudoyer, the architect, and Member of the Institut de France, during a period of nearly fifty years, in which he noted the principal events affecting the architectural history of his country. The diary, which is in two volumes folio, contains upwards of eight hundred entries, and embraces a variety of minute details, has been placed at M. Normand's disposition by M. Alfred Vaudoyer, grandson of the architect.

His notes made during the First Consulate and Empire present an extraordinary picture of the versatility, energy, and restless impatience of the first Napoleon, as well as of the devotion, self-sacrifice, and prodigality of the French people under the stimulus of his leadership. We see France, which had only just emerged from a revolution as disastrous as had ever devastated a kingdom, a revolution which was followed by a succession of campaigns in which the country had held its own against the world in arms, embarking upon works for the embellishment of the capital and the perpetuation of the heroic deeds of its Grand Army on a scale of magnificence unknown to modern times, apparently regardless of cost, and in a manner which can only be compared with the achievements of the ancient Romans. The Arc de l'Etoile was commenced before the design had been decided upon, and was pushed forward with extraordinary rapidity, the foundations alone costing £36,000. The column on the Place Vendôme was only ordered on the 1st January 1806, and on the 8th October in the following year the whole of the stonework was finished, several of the bas-reliefs were cast, and the whole work was completed before the end of the winter. Cardinal Dubellay dies on the 13th June 1808, and on the 18th June the Emperor decrees him a monument in the metropolitan church. The house No. 82, Rue de Lille, Paris, was adapted for a residence for the Emperor's step-son, Prince Eugène, at a cost of no less than £60,000, but when the bill was presented the Emperor peremptorily stopped the works, although they were very nearly completed.

On the 6th October 1807 the Emperor purchases from the Prince Borghese the antiquities at



his casino at Rome at a cost of £440,000. The first stone of the Bourse is laid on the 24th March 1808, and was finally completed in 1826 at a cost of £320,000. The works to connect the Tuileries with the Louvre are commenced, the estimated cost being £520,000, and an estimate prepared for the restoration of the palace at Versailles amounting to £1,200,000. The palace of Ecouen, which had been sacked during the Revolution, was converted into a school for the daughters of members of the Legion of Honour at a cost of £40,000. Such are a few of the items from the old architect's diary.

#### Crypt of Saint-Germain, Auxerre.

From R. PHENÉ SPIERS [*F.*], F.S.A.—

In an interesting Paper on "Some Remnants  
"of Mediæval Burgundy," read by Mr. Percy S.

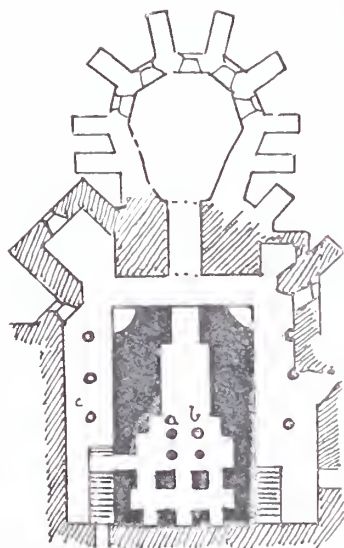


FIG. 1.

Worthington before the Leeds and Yorkshire Society last January, and published in the *JOURNAL* [p. 273], Mr. Worthington attributes the crypt of Saint-Germain at Auxerre to the ninth century. I visited the church last year, and came to the conclusion that the crypt is of three periods. The central portion towards the west dates from the sixth century, with an ambulatory round it of the ninth or tenth century, and an apsidal portion added at the east end when the church above was rebuilt about 1300. The sketch-plan [fig. 1] shows the existing arrangement. The



FIG. 2.



FIG. 3.

parts tinted black belong to the earliest church; the hatched portions to the second church, and the outlined portions to the addition in 1300. If I am

right in my assumption, this is perhaps the only crypt in France in which the Merovingian capitals [figs. 2 and 3] occupy their original position, for it seems almost certain that in the crypts of Jouarre and Grenoble both capitals and shafts are in each case taken from an earlier building, and used up in a crypt of the ninth or tenth century. The ambulatory is said to have been built by one Conrad, but whether he is the Conrad, King of Burgundy in the tenth century, I am unable to find out.

All the sketches are slight, for I had to hold my sketch-book and a lantern whilst drawing them. In fig. 4 I give sketch of capitals referred to by Mr. Worthington.

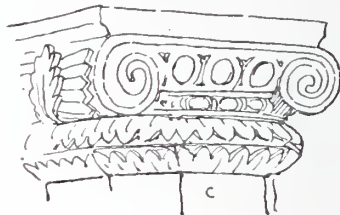


FIG. 4.

They are of rude character, but very vigorous in design. The leaf ornament on the cushion of the Ionic volute is an original treatment; in the capital on the south side similar leaves carry a flower. The shafts in both cases are octagonal, and they may have been taken from earlier buildings.

From PERCY S. WORTHINGTON [*A.*], M.A., to whom a proof of the above was submitted—

As to the two periods, and as to the character of the capitals, there can be no doubt. So far as I could see, I imagined that the capitals had been probably used in the tenth century from some earlier building near to or probably upon the same spot. I could not, however, obtain sufficient light to sketch them with any accuracy. Mr. Spiers knows so much more about these things than I do that probably his conjecture is more likely to be right than mine; and I hope so, for in that case the crypt is archæologically still more interesting than I supposed it to be.

#### "Stucco Lustro."

From WM. YOUNG [*F.*]—

A client who has just returned from Russia tells me of a plaster material, called "Stucco Lustro," which has been used in many of the palaces of St. Petersburg. It is averred for the material that it takes a polish like marble, retains its pure whiteness, and does not become yellowish like Parian cement. I understand that the material is made and worked in Milan; and as nothing appears to be known of it in England, I venture to suggest that perhaps one of our Corresponding Members in Italy might be willing to furnish particulars upon the following points for the use of members of the Institute:—

1. What is the composition of the material?
2. Does it retain its pure whiteness?
3. What is the price?



## MINUTES.

## SPECIAL GENERAL MEETING.

## NOMINATION OF CANDIDATES FOR ELECTION AS FELLOWS.

At a Special General Meeting, held Monday, 6th July 1896, at 8 p.m., Professor Aitchison, A.R.A., *President*, in the Chair, with 11 Fellows (including 7 members of the Council) and 8 Associates (including 2 members of the Council), the Minutes of the Meeting held 22nd June 1896 [p. 487] were taken as read and signed as correct.

The following candidates for Fellowship, found by the Council to be eligible and qualified according to the Charter and By-laws, and admitted by them to candidature, were recommended for election, namely:—Charles Henry Worley; Frank Walter Mee (Manchester); Henry Allen Prothero, M.A.Oxon. (Cheltenham); Arthur Charles Alfred Norman [A.] (Selangor, Straits Settlements); Beresford Pite [A.] (*Qualified as Associate* 1887); William Lovell Mason (Ambleside); Frederick George Knight [A.]; Francis Thomas Verity [A.] (*Qualified as Associate* 1889); John Tavorer Perry [A.]; Frederick Henry Reed [A.].

The President announced the results of the Intermediate Examination held in London and Manchester on the 16th 17th, 18th, and 19th June, and read the names of the thirty-four Probationers who had passed and been registered as Students [p. 493]. With regard to the Preliminary and Final Examinations the President stated that the Council had authorised the Board of Examiners to make known the results at the earliest opportunity, and that the names of those who had passed would be published in the JOURNAL of the 23rd July [pp. 492-94].

The President announced that the Council had decided to convene a Special General Meeting for Monday, 27th July 1896, for the purpose of submitting for election certain nominations of candidates for Fellowship; and also to discuss an interim Report from the Council, to be forthwith issued, on the question of the election of Fellows [Supplement, 16 (A), 8th July].

Mr. Wm. Woodward [A.] having pointed out that the last number of the JOURNAL did not contain answers to the questions he had given notice of his intention to raise at the Meeting of the 22nd June, but which he had refrained from doing on the Hon. Secretary suggesting that the occasion was inappropriate and that the information required would be given in the JOURNAL, the Hon. Secretary replied that it was intended to answer Mr. Woodward's questions in the next issue [see below].

The proceedings then terminated, and the Meeting separated at 8.45 p.m.

\* \* Mr. Woodward's questions were as follows:—

1. The date on which the Committee appointed to report respecting the election of Fellows was constituted; the names of the gentlemen forming the Committee; the number of times they have met; and what they have done in furtherance of their instructions.
2. Whether a letter has been received at the Institute with reference to work at the crypt of Canterbury Cathedral; what action has been taken upon that letter; and what is the result of such action, if any?

The Council direct that these questions be answered as follows:—

1. On the 2nd December 1895 a Special Committee was

appointed to consider that portion of the Presidential Address headed "The Class of Fellows: an appeal and a suggestion" [p. 12], and the following members were appointed to serve, namely—Professor Aitchison, A.R.A., Mr. J. Macvicar Anderson, Mr. John Belcher, Mr. J. M. Brydon, Mr. W. D. Caröe, M.A., F.S.A., and Mr. Alfred Waterhouse, R.A., the Presidents of Allied Societies then members of the Council, viz. Mr. Alfred Culshaw (Liverpool), Mr. E. J. Dodgshun (Leeds), Mr. Thomas Drew, R.H.A. (Dublin), Mr. John Goodacre (Leicester), Mr. W. Henman (Birmingham), Mr. John Holden (Manchester), Mr. James Jermain (Devon and Exeter), Mr. Joseph Oswald (Newcastle), Mr. T. Lennox Watson (Glasgow); together with the President, Vice-Presidents, and Hon. Secretary of the Institute. The following members were subsequently added:—Mr. Charles Barry, Mr. Thomas Blashill, Mr. Charles Hadfield, Mr. Edwin T. Hall, Mr. Ed. W. Mountford, Mr. John Slater, Mr. R. Phené Spiers, F.S.A., Mr. Beresford Pite, Mr. W. H. Atkin-Berry, and Mr. J. Sivewright Gibson. The members of the Committee have held five meetings. Their Report, having been considered and revised by the Council, was ordered to be printed as an interim Report, and issued to members for discussion at a Special General Meeting convened for the 27th July.

2. A letter was addressed to the Council by a Fellow of the Institute calling attention to certain work then being carried out in the crypt of Canterbury Cathedral, and expressing a hope that the Council would use their influence to prevent any further progress being made therewith. Inquiries were thereupon made of the architect responsible for the work, and a copy of his reply, together with a copy of a letter he had received from the Seneschal of the Cathedral, was sent to the gentleman who had drawn attention to the matter, on which correspondence no comment has been made.

## PROCEEDINGS OF ALLIED SOCIETIES.

## THE LIVERPOOL SOCIETY.

The Training of Workers in the Applied Arts.  
By Robert Anning Bell.

Read 11th November 1895.

It is one of the great misfortunes of Architecture in the present day that the several departments of the Applied Arts have become so specialised; and even subdivided in themselves and each subdivision specialised; with the result that the artificer, instead of getting an individual character into his work, has become too often a mere mechanical reproducer of a set pattern, or part of a set pattern—his only pride in the smoothness of his finish and in the rapidity with which he can get his work done.

This is partly because of the extent to which the study of archæology (in itself a blameless amusement enough) and the slavish admiration of any kind of thing which is old has carried the public as well as the artist—so reducing architecture to meek imitation. Partly the fault of those architects who, revolting against the archæologists, have been bitten by an excessive desire for originality, and have raked, not exactly heaven, but earth and the limbo of their own preposterous fancy for new and startling designs—designs for which no sanely trained artificer can devise appropriately monstrous details; consequently they themselves have had to invent them, and have reduced the artificer to a mere executant of their vain imaginings—so reducing Architecture to chaos. And partly because of the increased competition for work, which has begotten a weak deference for the sort of client who absurdly says that he "knows what he likes."



Still, though Architecture has got into a very bad way, it is not quite hopeless, and we may find some comfort by comparing it with the later history of the sister arts of Sculpture and Painting. I am referring to them now in their independent forms; as applied arts, of course they have suffered in fellowship with architecture, and to as great an extent.

It is well to remember that sculpture was quite imitative in the earlier years of the century and for some time before. The Greek revival tainted the work of even such a man as Flaxman; and what it could do at its worst was shown by men like Gibson, Behnes, Bacon, and Banks in England, and Canova and Thorwaldsen abroad; and it lingered on into our own time in the work of Calder Marshall and Woolner. Painting suffered considerably—in France quite severely—from the same epidemic, and for a long waste of years the school of David flourished rankly triumphant; in England the works of Benjamin West—those immortal works—are the most notorious examples of the style I can recall at the moment; but the essentially romantic feeling of English painting was never destroyed, and survived to assimilate good from the subsequent Gothic revival. The tradition of the great Dutch school was also always carried on, and flourished worthily in the sympathetic hands of Wilkie and his followers. It should be a source of pride, too, to us, to remember that it was English work which started the revolt of the French artists against the stifling classic tradition.

This great Greek disease has now worked itself out, and both arts have a distinctly nineteenth-century character; the influence of the past is perceptible, but that is not imitation; the great masters are studied for the laws of beauty and the limitations of art, but nature is seen through modern eyes.

The Gothic revival has, from the nature of things, had a greater influence on architecture than on painting and sculpture, and its influence has had a more disastrous effect. Sculpture was only affected by it in that it was still further dissociated from architecture, it went on its own way; and in painting what little effect it had, worked, as I have said, mostly for good, as witness the works of the great Pre-Raphaelites. Painters, too, I think, realised sooner than the mass of architects or sculptors that it is not in the perfect flower of art, but in the tentative efforts towards it, that the most helpful suggestions are to be found by the artists of future ages; they were studying the works of the Byzantines and the Primitives for *suggestion*, whilst the architects were studying the Early English and Decorated for *perfection*. It is only lately that the sculptors have turned to the Italians, and sculpture may now be said to be in a healthy, if not in a very robust, condition. And Architecture, too, shows evident signs of regeneration. We may fairly expect that, as the sister arts have survived the flood, Architecture, though a more acute sufferer, may also struggle through. There are a few distinguished men and many enthusiastic followers doing good work now, and giving good promise for the future; but you need only look about for the first 500 yards you walk after leaving this place to see how severe the struggle is. The movement is quickening day by day, but the difficulties are many and serious. There is too much variety of counsel, and there is always the temptation to be content with giving the public what satisfies it rather than to work ahead of it, and perhaps be scoffed at for a dreamer and faddist. Architects—and here I come more to my subject—can do little by themselves: the execution of their ideas, however well conceived, is, and always will be, marred until the artificer or craftsman has been restored to something of his old position. His education is a matter of the greatest importance to them, and it is worth their while to study the causes of his deterioration, and to find the best methods of replacing him on his old level. In bygone

times he was trained by apprenticeship to a master who was working in the prevalent style of the time, he began on the humblest details of his craft, and got on gradually until he could be trusted to carry out complete works from a rough sketch or even a mere description of an idea—he, as a matter of course, supplying the proper treatment—and sometimes both idea and treatment were his own, and he was merely given a space to fill. In that way play enough was given to his individuality, always, of course, in subordination to the architect; a subordination not then felt as a trammel, as they were both working, and could not help working, in the same style.

We can never have quite that again, perhaps; but I think we can get, and are getting, something more like a style than has been in existence for the last fifty years. I believe it to be the great essential for a living art, and that we can expect nothing more than the isolated *tours-de-force* of exceptionally clever men until we have it. The acquisition of a style is our great difficulty and our great necessity: it is a delicate and elusive thing, it must not be too self-conscious, or it will be mere pedantry; it is rather a mood than an intention—the track along which ideas develop rather than an idea itself. No man can say, "Let there be a style," and forthwith evolve one. Style, in the sense in which I am using the word, is the result of many minds working in sympathy, though in diverse arts; it is the common factor which remains when the peculiar individuality of each is subtracted from the mass of their work. The younger catch it from the elders, and in turn pass it on to still newer comers. It is a tool and a servant to the stronger men, and a prop and guide to the weaker. It seems to me that we may best obtain it, therefore, by mingling more closely the students and workers of the various arts and crafts, getting them interested each in the work of the others, and not too closely confining their studies to their own; developing that flexibility of mind which is necessary to adapt an artistic idea to the material in which it is to be carried out, and getting that unconscious likeness which is sure to exist to some extent in the future achievements of men who have worked together and in sympathy. If architects, modellers, decorators, iron and brass workers, paper and carpet designers, stained-glass painters, and the rest of them worked familiarly together and under good influence in their earlier years, some sort of common feeling would surely show in their mature work, bringing it into greater harmony than we see at present.

This seems to me to be the great reason for Art Schools, if they are well managed, and not mere museums of dead styles, but training places for a living one; though in some ways they seem but a poor substitute for the old workshop training. I do not in the least mean to decry modern workshop training; it is of the greatest necessity, and should be steadfastly encouraged; but from the want of common style and the specialisation of work, owing often to the use of machinery, it does not cover the ground as it did in the past. An art school, whatever its equipment—and most have a poor one—can do little more than teach the applied arts theoretically; the application must be learnt on practical work, and this is seldom obtained but through the workshop. I can imagine a development of the art school in which the advanced students were employed on practical work under some experienced man, and so gained strength to work independently. But this development is not likely to occur except in sporadic cases, and would never be sufficiently large to train the majority of applied artists.

This modern style which I desire must be mainly the work of the greater artists; it is not, as the changes in the old styles were, a common impulse felt by all—felt and expressed first by the quicker minds and reflected by the others, like the transition from Norman to Early English,

and from that to Decorated. As it needs a greater effort to start a ball than to keep it rolling, we are in a more difficult position than they were, and need very strong men to give the new impulse; strong in having a great refinement and restraint in their invention, and in having an intuitive sensitiveness—it can scarcely be called conscious, or the result of reason—for what is suitable to their purpose—that is, to modern conditions—among the many threads dropped in the past or among the thousand suggestions to be got from Nature. It is from Nature that I should expect the original factors of a new style, and from the past those guiding rules which would keep it sane and temperate. But I think it is necessary that all craftsmen should get some idea of the methods by which the greater men have arrived at their results; hence they should study much in the same way, which would also enable any potential great man among them to attain his proper development; they should draw and model as the others did, and they should study the same class of examples of past work—those examples which supply the germs of the modern development. This is the use of training in the antique and life classes, and of the study of architecture; studies which few of the artificers of the past took up, and so are not founded on their precedent.

There is, I think, too much striving for originality just now. Men are blamed too much because their work is rather like that of others; people think more about the man who designed a thing than of the design itself; and I am sure that over-sensitive minds often leave out some feature which would add beauty to their work, or insert some inferior one, out of fear of being called plagiarists. It is a foolish as well as a dangerous fear. All the great artists were notorious plagiarists, and the slight variations they made on stolen ideas helped largely in the growth of the styles they worked in. It is odd, too, that plagiarism of a modern man is blamed more than plagiarism of older work; I think it should be rather the other way. Originality, where it exists, is sure to show, even where all the details are stolen. Gray's *Elegy* is a great and original poem, though, I believe, almost all the ideas in it are transplanted from other men's books. And where originality does not exist, to refuse suggestions from others will not develop it. I believe that this worship of originality has done considerable harm. Masters who were good men themselves have been too afraid of impressing their individuality on their students: they have tried to be too impartial, and have presented to the bewildered beginner the hundred styles of the past and the whole range of nature, saying, "Study this, assimilate it, and produce an individual style." No wonder the result has been severe indigestion. This idea, too, has, in fact, made it unnecessary for the master to have an individuality of his own; he needs merely an appreciation of it in others, or to be supposed to have such an appreciation; and as the supply of men of that kind is incomparably larger than that of men of the other sort, the Great National Art Training Mill grinds merrily on, filling the country with its produce. Now, you all know that in architecture the best men are usually trained by the best men; there are of course splendid exceptions, but I think that most of you would say that a youngster would stand the best chance by being sent into the office of some strong man whose work was characteristic. You do not talk about his individuality being swamped by good work; you would expect it to be strengthened by it in the long run. The pupil may in the course of time do very different work from his master, and yet his master's influence may have been for good. And so it surely is in all forms of art.

We know that the great sculptors and painters of Italy—those whose work can be called applied art, and which, therefore, directly affects us—were almost always trained

under great men. Michelangelo and Lionardo were both pupils of Ghirlandajo, a strong man whose style is very distinct; but I do not find any sign of their individuality having been stunted; and in the minor arts, though we have less record of the facts, I have no doubt that the good smith or glass painter worked for years in the style of the good smith or glass painter his master, and suffered nought thereby. I believe that in the matter of teaching design the master of an art school would do well to give students his own sketches for designs to carry out under his advice, as well as making them do designs of their own or copy good examples. The student would then found his work on his master's, and would never produce the senseless and incoherent medleys which one so often sees. Time enough for him afterwards to break away and do original work if he has it in him; and if he has not he may still be working in a good tradition. To sum up, I think that before the training of workers in the applied arts can be satisfactory we must develop some sort of general style. The strong men will of course have, each of them, a sort of sub-style of his own, but still there will be a kindred modern feeling running through them all.

The students should have a practical workshop training, even if the artistic merit of the work turned out in their respective workshops is not very high, as it probably will not be for some time to come. We should have art schools conducted by men who are working artists themselves—the best that can be got—and not mere schoolmasters, as is too often the case now; and these men should bring their own individuality more to bear on their students than they usually do now. Birmingham is a good example of what I mean. We should thus get throughout the country different schools, with different sub-styles in each, as existed in Italy in the past; instead of the cut-and-dried, centralised system which we have in the present day, and which, while proclaiming its desire for individuality in the student, expects to get it by suppressing that of the master, making them all teach from the same examples and in the same routine.

The students of all the arts should mix freely and familiarly together. This I know is done to a considerable extent, but not sufficiently in the case of architects. They would then get more interested in each other's arts; they should even study them, and they would then learn the relation each bore to the others, and think less of their own peculiar form of art as a thing apart; they would find that the arts are interlocked, and that one cannot well be learned by itself; they would feel that a common sentiment of style might underlie work in the most varied materials, and that it is the varied conditions involved in the use of varied materials which causes much of the seeming difference of the completed works. These conditions can only be really learnt in the workshop, but the common style which I desire can perhaps be best attained through such an Art School, or set of Art Schools, as I have described.

#### OFFICERS AND COUNCILS 1896 97.

##### The New South Wales Institute.

President, Lieut.-Colonel Rowe [F.]; Vice-President, Mr. John Barlow; Hon. Secretary, Mr. R. J. Denniehy; Hon. Treasurer, Mr. W. Kenwood; Council, Messrs. James McDonald, W. Pritchard, A. Spain, H. A. Wilshire.

##### The Dundee Institute.

President, Mr. Leslie Ower [F.]; Vice-President, Mr. Thos. M. Cappon; Members of Council, Messrs. George Jamieson and Richard G. Murray (architects), and Messrs. John Macfarlane (sculptor) and Wm. Farquharson



(plumber); Auditors, Messrs. G. A. Harris and Robert Smith; Hon. Sec. and Treasurer, Mr. J. J. Henderson.

## LEGAL.

### Building Estate: Drainage.

REGINA V. THE TYNEMOUTH DISTRICT COUNCIL.

This was a rule *nisi* for a *mandamus* on a district council to pass certain building plans. The matter came before a Divisional Court (Lord Chief Justice Russell and Mr. Justice Wills) on the 11th May and 17th June.

The applicant for the rule, the Marquis of Hastings, was the landowner of an estate, part of which he proposed to lay out as a building estate. For this purpose he deposited plans showing separate drains to each house leading into the sites of new streets, but no street sewers or outfall sewers were shown on the said plans, nor any cesspools. The proposed buildings and drainage did not contravene any existing by-laws of the district council. The district council refused to pass the plans, on the ground that no outfall was shown for the drainage of the proposed buildings and streets. The applicant obtained a rule for a *mandamus* on the district council calling upon them to show cause why they should not pass the plans, on the ground that it was the duty of the local sanitary authority to provide a system of outfall sewerage.

Mr. Lawson Walton, Q.C., Mr. T. Willes Chitty, and Mr. Herbert Chitty, for the respondent, showed cause against the rule; Mr. W. S. Robson, Q.C., and Mr. Alexander Glen supported the rule.

The Court held that the rule must be made absolute, on the ground that there was nothing on the plans deposited in contravention of any by-laws of the district council. The district council, as a rural sanitary authority, empowered to act as an urban sanitary authority by an order of the Local Government Board in all matters dealt with in section 157 of the Public Health Act 1875, could not refuse to pass the plans merely because they did not disclose an entire system of sewerage outfall, for which they, as the local sanitary authority, would have to provide.

### Drain or Sewer?

THE MAYOR, ETC., OF EASTBOURNE V. BRADFORD.

This was the defendant's appeal from the decision of a County Court Judge in an action brought by the Corporation of Eastbourne to recover the proportion of certain expenses in relaying a drain connecting a house belonging to the defendant and other houses belonging to different owners with a public sewer. The facts were agreed, and the only question was whether the conduit was a public sewer within the Public Health Acts 1875 and 1890, or a single private drain within section 19 of the Act of 1890. The learned County Court Judge, following *Self v. The Hove Commissioners* (1895), held that the drain in question was a private drain, and gave judgment for the plaintiff corporation. The appeal came on for hearing before Lord Chief Justice Russell and Mr. Justice Wills on 14th and 15th May.

Mr. A. Maemoran, Q.C., for the defendant; Mr. W. P. G. Boxall for the plaintiff corporation.

The Court gave judgment on the 18th June, holding that the conduit in question was a private drain within section 19 of the Public Health Acts Amendment Act 1890, and affirming the decision of the County Court Judge.

THE QUEEN V. THE VESTRY OF BETHNAL GREEN.

This was an appeal from the judgment of a Divisional Court (the Lord Chief Justice and Mr. Justice Wright). The London School Board applied for a *mandamus* against the vestry of Bethnal Green to compel them to repair a

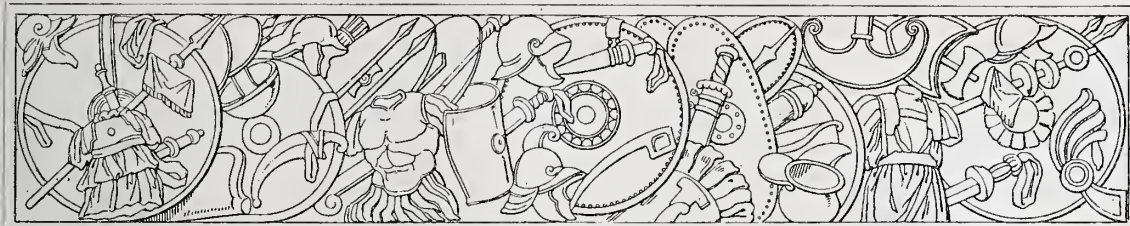
certain sewer. The drain or sewer in question was constructed in 1866 and received the drainage of several houses. It did not appear that the previous approval of the Metropolitan Board of Works or that any order of the vestry had been obtained for its construction. The question was whether it was a "drain" or a "sewer" within the definition of those words in section 250 of the Metropolitan Management Act 1855. If it was a sewer it was repairable by the vestry; if it was a drain it was repairable by the School Board as the owners of the premises. The section enacts that "the word 'drain' shall mean 'and include any drain of and used for the drainage of 'one building only, or premises within the same curtilage, 'and made merely for the purpose of communicating with 'a cesspool or other like receptacle for drainage, or with 'a sewer in which the drainage of two or more buildings 'or premises occupied by different persons is conveyed, 'and shall also include any drain for draining any group 'or block of houses by a combined operation under the 'order of any vestry or local board; and the word 'sewer' shall mean and include sewers and drains of every 'description except drains to which the word 'drain,' interpreted as aforesaid, applies." Section 69 of the same Act enacted in a proviso that no new sewer should be made without the previous approval of the Metropolitan Board of Works. The Divisional Court held that the mere fact that the requisite consent had not been obtained did not prevent the new sewer when it was made from being a sewer repairable by the vestry. The vestry appealed, and the case was heard before the Master of the Rolls and Lord Justice A. L. Smith on the 14th July.

Sir Edward Clarke, Q.C., Mr. Jelf, Q.C., and Mr. Bevan for the vestry, and Mr. R. C. Glen for the School Board.

The Court dismissed the appeal.

The Master of the Rolls said that, as regards the proper inference of fact, he could not doubt that in real truth the person who laid down this pipe laid it down without having obtained the requisite authority to do so. They must see what this pipe or contrivance ought in point of law to be called. Section 250 of the Metropolitan Management Act 1855 defined a drain and a sewer. Was this contrivance a drain, or a sewer? It dealt with the sewage from more than one house. It was said that it was a combined operation made under the order of the vestry, and came therefore within the definition of a drain. By section 250 "sewer" was to include sewers and drains of every description except drains to which the word "drain," interpreted as therein, applied. Therefore if this was not a drain it was a sewer. It was a sewer unless they could say that it was a combined operation for draining a group of houses under the order of the vestry. Could the Court say, as an inference of fact, that there was an order of the vestry? There was no minute of any such order. If there had been such an order it must be known. It would be contrary to the truth to say that there was such an order. Therefore there was a combined operation dealing with the sewage of more than one house carried out without an order of the vestry, and it was a sewer and not a drain. The person who laid down this contrivance without an order acted contrary to section 47 of the Metropolitan Management Act 1862. He had done a wrong thing, but he had made a sewer within the definition in section 250 of the Act of 1855. The vestry must have known of this sewer and of its connection with their principal sewer, and it remained there for thirty years without objection. By section 68 of the Act of 1855 it vested in the vestry. The judgment was therefore right.

Lord Justice A. L. Smith concurred. As regards section 69 of the Metropolitan Management Act 1855, in his opinion the proviso in that section applied only to sewers made by the vestry or district board of works, and not to sewers made by a third person.



## MONASTIC AND LAY CRAFTSMEN OF THE MIDDLE AGES.

NOTES AND COMMENTS ON THE LATE ANTON SPRINGER'S TREATISE *DE ARTIFICIBUS MONACHIS ET LAICIS MEDIÆVI*.\* By G. BALDWIN BROWN [H.A.], M.A., Professor of Fine Art in the University of Edinburgh.

THIS interesting essay by the late Dr. Anton Springer, of Bonn, which first appeared more than thirty-five years ago, is devoted to an examination of the question whether the artificers of the Mediæval period belonged in the main to the ranks of the clergy or the laity. The period dealt with ends with the twelfth century, for the lay origin of most of the work of the Gothic epoch from the thirteenth century onwards has not been called in question. It is in connection with the Romanesque era, when the great monasteries were at the height of their wealth and influence, and the towns had not begun to rise into importance, that it becomes of special interest to determine where and by whom were carried on the works of building and decoration which were the glory of the Middle Ages. The generally prevailing opinion at the time Springer wrote was that the practice of the arts during the centuries in question was the exclusive possession of the monasteries, and that the lay artist had practically ceased to exist. In this opinion various authorities, from Schnaase downwards, are shown to agree, and it may be noted that the best Paper in which the evidence for the activity of the monks in various fields of art has been marshalled is one by the Comte de Montalembert in Didron's *Annales Archéologiques*, tom. vi. p. 121.

The aim of Springer's tract was to controvert this prevailing opinion, and to show that at all periods, from the early Christian times onwards, lay artists in all branches were active in the Western lands, and that, as far as could be ascertained, their numbers exceeded those of their clerical rivals. In some useful preliminary remarks the author pointed out that in Mediæval literature the words "made" and "built" were frequently employed when "caused" "to be made" or "provided the funds for building" would have been the correct expression. Thus, Charles the Great is said to have himself built the church at Aachen in which he was buried, and William of Normandy to have himself constructed from the foundations the minster of St. Stephen at Caen. We know too much about Charles and William to make the mistake of reckoning them as practical architects; but when we read of the energetic Bishop Angilbert of Milan, in the ninth century, that he constructed anew in wonderful fashion the altar at Sant' Ambrogio, we should be tempted to ascribe to his handiwork the sumptuous antependium of gold and jewel work which adorns the altar-front. This is, however, inscribed with the name of the actual fabricator, a certain Wolfinus, and no mistake is possible. This should make us hesitate about classing abbots or bishops of whom little is known among practical craftsmen, because we are told that they "made" this or that artistic product.

In the spirit of thoroughness characteristic of the leading historical scholars of Germany,

\* A copy of this treatise, "*De Artificibus Monachis et Laicis Mediævi*." Scripsit Antonius Henricus Springer. "Bonnæ: apud Adolphum Marcum, MDCCCLXI," was presented to the Library at the close of last year by Professor

Aitchison, A.R.A., now President, who in a characteristic letter writes: "It is luckily in Latin, for as it is by a 'learned German, it would else be in German.'" The gift was referred to in Additions to the Library, p. 61.



Springer went through the epochs of Mediæval art from the time of Constantine, and proved from records the existence and activity at each period of lay craftsmen. An analysis of a list of 210 names of craftsmen, gathered from literary records of the ninth to the twelfth century, shows 64 clerics and 146 laymen; while the inscriptions on actual monuments of art, which are far more frequent in Italy than north of the Alps, seem to betoken an even larger proportionate representation of the lay element. While the facts thus adduced by the author were intended to prove the importance of this lay element throughout the Middle Ages, he did not attempt to deny the great and constant activity of the cleric. It is probably the fact that the arts in Italy were more in the hands of laymen than was the case north of the Alps; but that the German monasteries in the Middle Ages were really the homes of the artistic activity of Central Europe cannot reasonably be doubted. One very cogent piece of evidence on this point Springer has omitted to bring forward. This is the well-known treatise on the practice of the arts by the German monk of the eleventh or twelfth century who writes under the name Theophilus. Theophilus addresses himself as an accomplished craftsman to practical learners, and yet at the same time he never forgets that he is a monk dealing with those who profess the religious life. The prefaces to the three books into which his treatise is divided are devoted to a discussion of artistic practice in its relation to the ideas and occupations of religion, and would have no meaning had not the various crafts been recognised as having their natural home in the cloister. We may accept what our author proved about the lay craftsman of the Middle Ages without seriously modifying the accepted view of the artistic importance of the cloister. It is doubtful if he was right in his surmise (p. 34) that among clerics the artists would have been found rather in the ranks of the secular than of the monastic clergy. The evidence of Theophilus points distinctly in the opposite direction.

Whether or not the artistic work of the Middle Ages was done by lay or cleric, the interest of it for us remains the same. The notices of craftsmen that can be collected are, after all, little more than names, and we do not find ourselves inquiring with any special interest when and how they worked. The productions are to us rather those of a period than of individual effort. The biographical interest attaching to them is comparatively slight. If one did not make them they would have been made by another, the handiwork remaining the same. This impersonal character of Mediæval work gives it a good deal of its special charm, and marks it off from the productions of other famous artistic epochs, such as those of Ancient Greece and the Italy of the early Renaissance. At such periods as these last the interest of the story of art comes to attach itself chiefly to the efforts of the individual artist of genius, who won distinction in those more popular forms of art, imitative sculpture and painting. Now Sculpture and Painting, as so-styled "fine" or "noble" arts—to borrow phrases not older than the Renaissance—did not exist in the Middle Ages proper. The chisel and the brush were wielded then by workmen in the service of the master-of-the-work (ordinarily a master-mason), or, at any rate, in conscious accordance with the general scheme: no carver dreamt of setting his sculptured saint on a pedestal as an independent creation; no limner would wrench his storied panel from the altar-front to frame it on a wall apart. We must not, therefore, look to the Mediæval era to supply us with independent achievements in these fascinating arts that may match those of the other famous artistic epochs already referred to; but if this seems to limit on the one side the interest of Mediæval art, on the other there is ample compensation. We may be content to forego the statue and the picture of the Greek and Florentine master for the sake of certain excellences that characterise the decorative crafts when pursued in the unambitious spirit of the Mediæval craftsman. The absence of the more highly developed manifestations of the arts in question was, indeed, favourable to the maintenance in his work of a very high general level of merit, and this in some most important respects.

Sculpture and Painting, as understood in Greece and Italy and in the modern world, are always based on a searching and prolonged study of Nature, especially in the human form, and it has generally happened that the knowledge thus acquired lays such hold on the artist that he employs it everywhere, even in unsuitable connections. As a result, this higher artistic practice tends to the obscuring of some of the simpler, more fundamental artistic truths. This was the case in the wall-painting of Italy. The pictorial power of the artist of the Renaissance period was so highly developed that he could not resist lavishing all its resources on the decoration of a wall, for which a flatter, simpler treatment would have been in sounder taste. From the point of view of what is strictly in accord with the principles of mural decoration, the early Christian mosaic and the Romanesque wall-painting of the Rhineland are better models than the fresco of the advanced Italian schools. So in Greece, the mastery of the artist over the human figure led him to overdo this particular motive in his decoration. As statues, the gold and ivory masterpieces of Pheidias would probably be recognised by us as beyond cavil; but one may confess to feeling that the battle of the Heroes and Centaurs was an unsuitable motive for the adornment of the edges of Athena's sandal-soles, while the arrangement of the figures of fighting Greeks and Amazons on her shield—as seen in existing reproductions—does decidedly not make a good design for a surface of that shape and character. In its form, its structure, and the exquisite texture of its glaze, the Greek vase is beyond all criticism; but when we ask ourselves whether as an ornamental motive the human form is really suitable for the decoration of these rounded bodies, there can be but one answer. Independently of the qualities just singled out for praise, and simply considered as a decorated pot from the pottery point of view, the Greek vase is not so good a product of industrial art as, for example, a piece of Hispano-Mauresque lustre-ware, or even the output of some old English kilns.

This perfect suitability and fitness, which the craftsmen of the more stirring art epochs are sometimes tempted to forget, the unpretending Mediæval worker nearly always preserves, and it may fairly be argued that it was really of advantage to Mediæval carving and painting that their scope was limited. The craftsman was saved from dangers by the very absence of that personal ambition which carried a Lysippos, a Donatello, a Della Robbia, from the ranks of the bronze-founders and masons and potters to that of creators of ideal shapes of loveliness. Hence, though Mediæval carving and painting are limited in expressiveness, and in abstract purity and refinement of forms are not equal to those of the classical schools, yet in their general decorative effect they are nearly always right. Subordinate as it is to the larger whole of which it is a part, Mediæval ornament seems to have grown out of the structure to which it clings. It is not, like the enrichment “applied” by the modern craftsman, an addition, an afterthought, but is as inevitable as the processes of nature, in as intimate relation to the fabric as the flower is to the plant. This is, of course, specially noteworthy in architectural enrichment, where the supremacy of the structure is always apparent, but the same character runs through Mediæval decorative work in general. It was as if the ornamentalist had schooled himself by architectural work into so thorough a knowledge of the principles of decoration that he applied them instinctively to whatever work came under his hand.

His treatment of an arcaded front or storied tympanum, his hewn and painted caps, his spandril fillings, were not more tactful in ingenuity and self-restraint than the carvings and coloured medallions in the wooden altar-back, the iron scrollwork spreading from the hinges of the sacristy door, the vast dragon-footed candelabrum of molten bronze, the pierced leafage of the censer-lid; and even where there was no question of architecture at all, we find the same happy subordination of ornament to a general scheme. The early illuminated manuscript is a case in point. Here, though there is no structure, there is guidance in the form and character of the text upon the severely bounded leaf, and the docile ornamentalist,



working from within outwards, has clothed the words in beauty, and so displayed them on the dazzling and sumptuous page that they are as clear in the midst of their elaborate setting as if the clerk had but newly writ them on the vacant folio. This is ornament discreet, well chosen, aptly fitted to its place and function. How different is the artistic effect of these really fine Mediæval manuscripts of the tenth to the twelfth century from that of the later productions of the Flemish and Italian schools, when the naturalistic tendencies of the art of the time had perverted the decorative instinct, and substituted the all too elaborate miniature picture for the old happily conceived scrolls and flourishes, in themselves quite unpretending, and deriving their value from the justness of their relation to their surroundings! Mediæval art is in many respects a better subject of study for the modern designer than the more showy and popular productions of the Italian Renaissance. In the older days of the Science and Art Department more harm than good was done by the circulation of copies of the latter, in the form of Ghiberti Gates and the like, throughout the schools of design. The atmosphere of Mediæval art is the more wholesome one for the student to breathe, and we are grateful to Professor Aitchison for taking us back into that atmosphere by thus refreshing our memory with Anton Springer's valuable tract.

\* \* Consult many of the works of the late Professor Willis, in the Library, from his *Architecture of the Middle Ages, especially of Italy* (8o. Camb. 1835), to his several "architectural histories" of Canterbury and Chichester Cathedrals &c. (1845-1869); also his Paper on the *Successive Construction and History of the Church of the Holy Sepulchre at Jerusalem* (S.P. 17 May 1847).

VIOLETT-LE-DUC.—*Dict. Rais. de l'Architecture Française*, Vol. I. p. 107 (Art. *Architecte*). 8o. Paris 1858.

TRANSACTIONS O.S. 1859-60.—"Gleanings from Westminster Abbey," by G. Gilbert Scott [F.], A.R.A. (pp. 1 and 179); "On the Superintendents of English Buildings in the Middle Ages, with "especial reference to William of Wykeham," by Wyatt Papworth [F.] (p. 38). 4o. Lond. 1860.

TRANSACTIONS O.S. 1860-61.—"Architectural Drawing," by W. Burges [F.] (p. 15); "On Church "and Conventual Arrangement," by Rev. Mackenzie E. C. Walcott, M.A., F.S.A. (p. 29). 4o. Lond. 1861.

G. E. STREET [F.].—*Some Account of Gothic Architecture in Spain*. 8o. Lond. 1865.

THE QUARTERLY REVIEW.—April 1872, "The State of English Architecture"; Oct. 1872, "The "Completion of St. Paul's"; and Oct. 1874, "The Hope of English Architecture."

TRANSACTIONS O.S. 1874-75.—"On 'The Hope of English Architecture,'" by William H. White [F.], and Discussion (pp. 54 and 65); "Architects and Master-Workmen," by John J. Stevenson [F.], and Discussion (pp. 79 and 89); Short Papers by the late Edwin Nash [F.], the late W. Jackson [F.], and Sir Edmund Beckett, Q.C. (now Lord Grimthorpe), three communications received after the close of the Discussion (pp. 100-108). 4o. Lond. 1875.

TRANSACTIONS N.S. Vol. III. 1887.—"Notes on the Superintendents of English Buildings in the "Middle Ages," by the late Wyatt Papworth, and "Architectural Drawing in the Middle Ages," by the late W. Burges, revised by Papworth (pp. 185 and 235).

THE DICTIONARY OF ARCHITECTURE.—Numerous articles.

## MEDLEVAL FABRICATION OF MATERIALS FOR GLASS MOSAIC.

RECIPES FROM A MS. OF THE XVI<sup>TH</sup> CENTURY IN THE BARBERINI LIBRARY, WITH NOTES AND TRANSLATIONS BY WILLIAM SCOTT, *Qualified as Associate* 1870, *Soane Medallist* 1877, *R.A. Travelling Student* 1878.

HAVING received from the Institute, so far back as the beginning of 1894, a Pamphlet containing some unpublished "Ricette," or "Recettes," or Recipes, which form part of a manuscript dated Murano 1536, with a request that I would translate them for the JOURNAL; and having interpreted far too literally the kind permission of the Editor to take as long a time as I liked in making a translation, I feel that an explanation is due to him for my apparently unconscionable delay. One excuse, perhaps, is that I was passing the winter at Bordighera when his letter addressed to my residence at Venice first

reached me, and since then I have only been back to Venice for two short visits ; another, that much time has been expended in attempting to obtain the best translation with the help of the best authorities. Though a few phrases of the original recipes still remain untranslatable, most of the difficulties, which were neither few nor slight, have disappeared ; and the Institute is heartily welcome to the results, my only fear being, as a well-known wit has said, that the *à propos* may have gone for ever.

It is, however, necessary to quote from the Pamphlet referred to—*La Mosaique Chrétienne pendant les Premiers Siècles*—and it will hardly need, I think, the permission of its author, Monsieur Müntz, now the learned Librarian of the Ecole des Beaux-Arts, to do so somewhat fully. Thus, the Appendix to the first portion of his subject begins as follows :—“ Les recettes “ suivantes sont extraites d’un manuscrit du xvi<sup>e</sup> siècle, qui est conservé à la bibliothèque “ Barberini (XLVIII, n<sup>o</sup> 78, ancien n<sup>o</sup> 2959) et qui a pour titre : ‘ Ricette per fare vetri “ ‘colorati et smaltati d’ogni sorte havuta in Murano. 1536.’ Elles paraissent inédites. “ J’en ai du moins vainement cherché jusqu’ici quelque reproduction ou analyse. Elles “ diffèrent notablement de celles du xiv<sup>e</sup> et du xv<sup>e</sup> siècle, que M. G. Milanese a publiées dans “ un volume, aujourd’hui introuvable, faisant partie de la *Scelta di Curiosità letterarie*. “ L’orthographe, fort irrégulière, a été scrupuleusement respectée dans notre transcription. “ Cet horrible dialecte vénitien n’a rien à envier pour la barbarie au recueil de la Bibliothèque “ de Lucques, reproduit ci-dessus ; certains passages sont véritablement inintelligibles. J’ai “ dû me borner dans ce cas à donner une transcription littérale, dont je garantis l’exactitude.” Here follow sixteen *ricette* transcribed from the original, and a final paragraph, to the effect that other recipes will be found in a Bolognese manuscript, published by Mrs. Merrifield in her *Original Treatises . . . on the Arts of Painting*. Lond. 1818–1849. Vol. II. p. 531 *et seq.* Also in three treatises of the fourteenth and fifteenth centuries, published by Milanese, under the title of *Dell’ Arte del vetro per musaico*. Bologna, 1864.

Now, in my opinion, the recipes are not of very great importance, and, apparently, were written down from dictation by some traveller who was not well acquainted with the Venetian dialect. Any one who knows how jealously the glass-makers of Murano kept their secrets will not be surprised to find that all is told therein except just that which is the most important part, in fact, the secret of success. An attempt to work from these recipes alone would probably result in disastrous failure ; but perhaps some few hints may be gleaned by those to whom the subject is of interest.

Monsieur Müntz, in his notes, might well have spared himself and us his attack on “ this horrible Venetian dialect,” seeing that the greater part of the recipes is written, not in Venetian dialect at all, but in *lingua*, badly spelt, if you will, and certainly not always clear, but only interspersed here and there with Venetian words, often, it is true, imperfectly and phonetically spelt, and often misunderstood by the original transcriber. They were evidently jotted down by one who was not familiar with the technical expressions used, and therefore could not be expected to transcribe them with perfect correctness and clearness. M. Müntz marks out some of the words for his especial scorn, such as “ *uero*,” pp. 57 and 60, &c. ; but it so happens that *vero* is the pure and only Venetian word for glass, and every one who has any reasonable acquaintance with old Venetian manuscripts or orthography is aware that *u* and *v* were convertible letters and used indiscriminately, so that *uero* = *vero* is the simple, clear, and only way of indicating the object referred to ; and therefore the pious horror of M. Müntz is, I venture to think, unfounded and absurd.

In some instances the sense of a passage is made difficult of comprehension by a punctuation for which the original can hardly be responsible, but I have had no opportunity of comparing this with the published copy. Certainly in one or two cases the meaning is not quite clear, and different authorities would render them in different ways ; but most of the



difficulties apparent at first sight have disappeared after patient examination and research. The translation now offered has been left as literal as possible without regard to literary form.

My thanks are especially due to the Comm. Stefani, Direttore degli Archivi di Stato, Venice; to the Rev. Abbate G. Nicoletti, Bibliotecario del Museo Correr; and to the Cav. Urbani de Gheltoff, for advice and assistance courteously rendered in the work of translation and research.

1. A far vedro tenero per mosaico.—To make Soft Glass for Mosaic.

Piglia una padella di vedro commune tinta di galla, con un ferro, et aggiungi altro tanto piombo calcinato, et a poco a poco porrai il piombo con il vedro, et non lasserai cuocere (fol. 239).

Take a pot\* of common glass, coloured with gall nuts, with an iron, and add an equal quantity of calcined lead,† and little by little you will add the lead to the glass and you will not let it burn. (Fol. 239.)

2. A far mosaico rosso in corpo.—To make Opaque Red Mosaic.

Tingi una padella di vedro con schiaggie di ferro, et artanta ramina senza brugiare et gettane tanto ch'el venghi rosso, et quando el sara mezzo cotto, aggiungi in una padella L. 10. de vedro di piombo, overo tanto piombo brusado et accompagnato con un terzo de cogolo, et messedalo spesso, el te fara buon color rosso, et se farai questa partita sara buon smalto rosso (fol. 250 v°).

Colour a pot of glass with iron filings, and the same quantity of copper, without burning it, and throw in enough to make it red, and when it is half melted add in a pot ten pounds of lead glass, or the same amount of burnt lead, and at the same time a third part of flint and mix it often, and you will make a good red colour; and if you do in this way it will be a good red enamel. (Fol. 250 vo.)

3. A fare mosaico morello.—To make dark (Brown or Black?) Mosaic.

In questa partita medema di sopra scritta aggiungi dentro stagno calcinato in questo modo: metti il stagno in una lavazolo in mezzo alla fornace, a maggior fuoco che sia, et quando el sara stato hora 8 o 10 tiralo fuori et quel sara calcinato gettalo in una padella meza, et si fara buon morello.

In this same mixture, as above, add tin calcined in this way: put the tin into a pan in the midst of the furnace with the greatest possible heat, and when it has been there eight or ten hours take it out, and that which is calcined throw into a medium-sized pot, and it will make a good dark (brown or black?).

4. A far un bel azuro per mosaico.—To make a fine Blue for Mosaic.

Piglia 8 o 10 lire de vedro, in un padelotto che sia cotto, et butta dentro L. 2 di smalto bianco, poi butta un poco d'azuro, cioè gafaro, & fara buon color, & se tu vuoi reducir a Turchese aggiungi un poco di ramina brusada (fol. 251).

Take eight or ten pounds of glass in a big pot, let it melt, and throw in two pounds of white enamel, then throw in a little blue, that is to say *Gafaro*,‡ and it will make a good colour; and if you want to turn it to turquoise blue add a little burnt copper. (Fol. 251.)

5. A far verde in corpo per mosaico.—To make Opaque Green for Mosaic.

Habbi un padelletto di vedro de piombo, et ganolim bello, et fatto dentro quello padello, & sara buon verde, et quanto più tu ne gettarai, tanto verra più chiaro, & questa è la maniera di far mosaico, et perche tu ne poi far di questi gradi quanto tu vuoi, & quanto el granolim sara più bello tanto più bel verde fara, & se tingerranno due padelotti, uno per il uero (*sic*) di piombo, & uno per il ganolim, e buttar un altro fara meglio per giungere nel padelletto del verde (fol. 251 v°).

Have a big pot of lead glass and fine *ganolim*,§ and mix in that pot, and it will be a good green, and the more of it you throw in the lighter it will become, and this is the way to make mosaic, and thus you can make as many shades as you like, and the finer (better) is the *granolim* the better green will it make; and if you take two pots, one for the lead glass, and one for the *ganolim*, and throw them into another pot it will be better for producing the green. (Fol. 251 vo.)

6. A far vedro rosso in coverta per mosaico.—To make a Covering (Film) of Red Glass for Mosaic.

Piglia vitriol & mettilo a brusar in fuoco de verberatione, et quello che restara più rosso quello è miglior, piglia di quello vero poca parte & compagnalo con

Take vitriol and put it to burn in a reverberating furnace, and that which remains most red is the best. Take a small portion of that glass and mix it with white enamel (?) || which has

\* \* These and remaining emendations on pp. 519-20 are by Mr. William Scott, author of the Paper:—

\* Crucible.

† Or calcina di piombo = "chita di piombo," vide p. 59, (?) oxide of lead.

‡ *Gafaro* = Zaffero, grey oxide of cobalt mixed with silex.

§ *Ganolim* = Granolim; "a material which serves as a

"base for the manufacture of glass. It is made of 30 lbs. of lead and 3 lbs. of fine tin. These substances are melted (calcined) in the furnace, and they are mixed 'a frittta di cristallo' made with white Tuscan marble dust and white salt of tartar."

|| The (?) is in M. Müntz's transcription, though the reason is not obvious.

smalto bianco (?), che non habbia manganese, & tridalo insieme con quella come fanno li pintori et poi mettilo con il pennello, sopra le piastre, et vale mettendo a poco a poco in tanto fuoco ch'el cala la coverta messa su la piastra; habbi diligenza a dargli il fuoco, perche se tu desti el fuoco troppo dappoi che le colado la coverta el se vastara, & debbe haver poco fuoco mentre cola (fol. 252 v°).

no manganese in it, and grind them together as the painters do, and then apply it with a brush over the sheets,\* and go on putting it little by little in just enough heat to melt the covering laid on the glass; be careful in applying the heat, because if you increase the heat too much when the covering is melted it will spoil it; and it must have only a slight heat while it is melting. (Fol. 252 vo.)

#### 7. A far mosaico d'oro.—To make Gold Mosaic.

Fa che la tua padella de vedro come un' (commune) habbia tento (*sic*) un terzo de vedro di piombo et messeda spesso, perche el non faccia torcion & quando el sara polita sopialo in boccie grandi quanto sara la piastra dove el se debbe metterlo, toglì chiara d'ovo & battila molto bene & poi lassala riposare, la fara aquarella chiara. Piglia questa terra battuta & buttala in un' bugliol d'acqua chiara de pozzo, et bagna quelli pezzi del detto vetro, & habbi foglio d'oro, dado, ne l'uno el foco et mettilo sul detto vetro, et lassalo seccar, poi habbi una paletta larga et grossa di ferro, & metti in fornace el detto oro sul vedro, poi toglì del vedro commun che sia mezzo vedro di piombo, cioè meta et meta, et butta sopra l'oro tanto quanto vuole esserle pesta, et fraeca con el ferro a to aral esser (*sic*) gigio et poi mettila su lera (fol. 253).

Let your pot of common glass be coloured with a third part of lead glass, and mix it often so that it shall not be stringy (?); and when it is clear blow it into pieces as large as the (iron) table on which they are to be put. Take white of egg and beat it thoroughly well and then leave it to settle; it will make a clear liquid. Take this beaten white (of egg) † and throw it into a bucket full of clear well-water, and wet those pieces of the said glass, and take gold-leaf, “dado, ne l'uno el foco,” ‡ and place it on the said glass and leave it to dry, then take a wide and big iron shovel and put the glass with the gold on it into the furnace, then take some common glass, which is half lead glass, that is half and half, and throw on to the gold as much as is necessary; beat and press with the iron, “a to aral esser gigio,” § and then place it in the cooling chamber. || (Fol. 253.)

#### 8. A far peretim per mosaico.—To make Beretino ¶ for Mosaic.

Piglia chita di piombo L. 25, cogoli de Verona libre 8, osso brusato de gambetii de castron L. 7, incorpora ogni cosa insieme & butta in padella, & messeda ben fara buon color per mosaichi & se tu vuoi mutar color butta dentro manganese o ferugine (fol. 253 v°).

Take 25 lbs. “calcina di piombo,” \*\* flints of Verona 8 lbs., sheep's leg-bones burnt 7 lbs., incorporate these things together, and throw into the pot and mix well; it will make a good colour for mosaic, and if you want to change the colour throw in manganese or oxide of iron. (Fol. 253 vo.)

#### 9. A far in corpo per mosaico.—To make Opaque (Green) for Mosaic.

Tingi il tuo vetro di piombo con ramina brugiata et poi habbi ganolim pesto, & buttalo dentro il padelotto & farai buon colore. Nota che quanto più ganolim tu metterai, tanto più faro (farai) verde chiaro et quanto manco ne buttarai farai più scuro, et questo modo ne puol fare 6 o 7 gradi de colori per mosaico. Nota se tu havesti in fuoco due padeletti, uno di ganolim & uno di vedro de piombo, & buttar d'uno in l'altro te verra assai meglio (fol. 254).

Colour your lead glass with burnt copper, and then take crushed *ganolim* †† and throw it into the pot, and it will make a good colour. Note that the more *ganolim* you put the lighter green you will make, and the less of it you throw in the darker it will be, and in this way you may make six or seven shades of colour for mosaic. Note that if you were to have in the fire two pots, one of *ganolim* and one of lead glass, and were to throw one into the other, it would come very much better. (Fol. 254.)

#### 10. A far un altro verde d'un altro color de gio.—To make another Green of another shade than that (above).

Tenghi il tuo vedro di piombo con ramina et poi butta dentro ganolim et poi cogoli de fisim et messeda, & farai buon color, et se porra lavorare (fol. 254 v°).

Colour your lead glass with copper and then throw in *ganolim* and then flints of the Ticino ‡‡ and mix it up, and it will make a good colour, and it can be worked. (Fol. 254 vo.)

\* Of glass.

† In the original the word *terra*, earth, is evidently meant for *chiara*, white of egg.

‡ The meaning of this phrase is not evident.

§ This is also quite uncertain.

|| Lera = ara, cooling chamber.

¶ Peretim = beretino.

\*\* Oxide of lead?

†† See above.

‡‡ *Cogoli di fisim* = ciottoli, or pebbles, from the river



## 11. A fare verde de un' altra sorte.—To make Green of another sort.

Tengi latemo con ramina el fara assai buon verde & cosi tu poi far color d'ogni sorte.

Colour *latemo*\* with copper, it will make an exceedingly good green, and thus you can make any shade of colour.

## 12. A far verde ad un altro modo.—To make Green in another way.

Tengi il tuo vedro con ramina ch' habbia dentro corno brusato, & poi trittalo dentro overo gambetti di castron fatto rotto (fol. 254 v°).

Colour your glass with copper mixed with burnt horn, and then grind it in, or sheep's leg-bones broken up. (Fol. 254 vo.)

## 13. A far vitrio per mosaico et altro colore.—To make Glass for Mosaic, and of another colour.

Habbi la tua padella de latimo in fuoco, et quando l'è cotto butta dentro azzuro, & quanto più ne buttarai sarà tanto più oscuro et più che la nera partida del latimo dentro fara più chiaro de color et de corpo, & può far così sei, o sette gradi de colori (fol. 325).

Have your pot of *latimo* on the fire, and when it is melted throw in blue, and the more you throw in the darker it will be, and the more *latimo* there is in it the lighter it will be in colour, and clearer in body,† and so you can make six or seven shades of colour. (Fol. 325.)

## 14. A far violetto o persegghin (?) ut supra.—To make Violet or Peach-colour as above.

Fa come qui di sopra et bisogna che in luoco dell' azzuro gli dia manganese.

Do as above, and instead of blue you must use manganese.

## 15. A far mosaico rosso morello.—To make Dark Red Mosaic.

Tengi una padella de uero (*sic*) comune con schiaccia di ferro & altrettanto ramina senzar bruser et senza pislar le schiaccie et vuole essere di quelle che cadano lavorando al favero suso, la cagene, et messa da spisso in padella acciaio non fassa tortioni negri per dentro, & vuole essere la fornace calda perche el vi da più bel rosso per el primer color, el secondo color che se chiama morello. Nota delle cose che vanno a far rosso madaine più, & vuole essere la fornace morta, & non lassar coser (*sic*) tanto, quanto è a far rosso, el terzo color è morello. Nota deglie della cosa di sopradetta che si fa a far rossa, ma dargliene più et con la fornace più morta, et così va crescendo in altri colori per fino a sei o sette gradi con questa maniera. Nota se tu buttasti dentro un poco di stagno staria ben meglio (fol. 326 v°).

Colour a pot of common glass with iron filings and the same amount of copper unburned and without braying‡ the filings, and they must be of those which fall when the blacksmith is working on the anvil, and put little by little into the pot so that no lumps may be made in it, and the furnace must be hot, for so it will give you a finer red for the first colour. The second colour is called dark red. Note: Of the things which go to make red put in more and let the furnace be slack, and do not allow it to stay on § so long as when it is to make red. The third colour is dark red (? darker red). Note: Put in of the aforesaid things for making red, but put in more, and with the furnace slacker, and so you go on increasing in other colours || up to six or seven shades in this manner. Note: if you threw in a little tin it would be much better. (Fol. 326 vo.)

## 16. A far un bel violetto a quadri da fenestre over su l'argento per coverta per mosaichi.—To make a fine Violet in Squares for Windows or to lay over Silver for Mosaic.

Habbi due padella di vetro cotto, una d'azzurro et una di pavonazzo tente seure di colore, poi lava il tuo vedro su il ferro da sopiare, primo l'azzurro et poi il pavonazzo sopra l'azzurro, & fallo andare a valido et sopra in bocca & fane pezzi da metter su l'argento in foro, & poi fa la sua piastra sciendo lutato, & mettelì talera, et farai bello colore.

Take two pots of melted glass, one of blue and the other of purple in dark tints of colour, then take up your glass on the blow-pipe, first the blue and then the purple on the blue, and set it whirling, and blow into it with your mouth, and make it into pieces on which to lay silver in the fire, and then make your sheet "sciendo lutato" ¶ and put them into the cooling chamber, and you will make a fine colour.

Ticino, which according to Neri (*L'Arte Vetraria*) were largely used in the factories of Murano.

\* *Latemo*=latimo, a white enamel whiteened with lead, and still called *lattimo*.

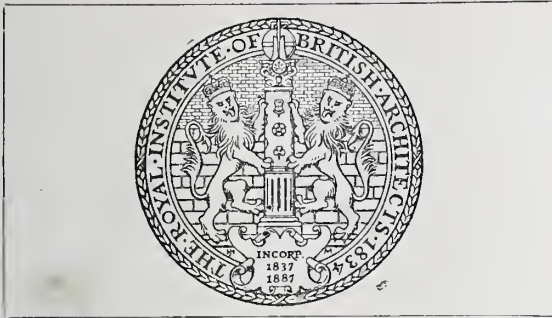
† In the sense of opacity or deusity.

‡ As in a mortar.

§ Lit. to cook.

|| Shades.

¶ The meaning is obscure: *sciendo* = essendo, and *lutato* might be *lustrato* = polished.



9, CONDUIT STREET, LONDON, W., 20th August 1896.

## CHRONICLE.

### THE SPECIAL GENERAL MEETING.

#### The Question of the Election of Fellows [F.R.I.B.A.]

In accordance with the announcement made by the President at the Special General Meeting held on the 6th ult., and pursuant to the Official Notice convening a Special General Meeting to receive and consider, after other business had been disposed of, an Interim Report from the Council on the question of the election of Fellows, such Meeting duly assembled on the 27th ult., the President, Professor Aitchison, A.R.A., being in the Chair. The Interim Report, which was issued on the 8th ult., is thus worded :—

The Council, having considered the question of the election of Fellows, have to report as follows :—

They find that the loss of strength to the class of Fellows from the highest number yet reached is 27. It is found, however, that the proportion of Fellows to Associates has been fairly maintained. In 1885 there were 371 Fellows and 708 Associates, in 1891 there were 567 Fellows and 821 Associates, in 1895 there were 588 Fellows and 933 Associates, and a higher total of members than ever before. In the eight years from 1886 to 1893 the class of Fellows increased 222 in strength, or an average of about 28 per annum; and in the years 1894 and 1895 it sustained a loss of 27, leaving a net gain for the ten years from 1886 to 1895 of 195, or an average of about 19 per annum. In the same period the class of Associates increased 222, or an average of about 22 per annum. The subscriptions from all classes increased in the same period from £3,089 in 1886 to £4,547 in 1895, an increase of £1,458.

In 1893-94 and 1894-95 only five architects, not previously Associates, were elected to the class of Fellows. In 1891 there were 63 Fellows elected, in 1892 there were 59, in 1893 there were 24, in 1894 there were 10, and in 1895 there were only 9. The Council consider that this noticeable decline is to be attributed mainly to the uncertainty that at present exists as to the

basis on which the election of Fellows is conducted. They recommend, except as hereinafter proposed, that the present regulations be systematised and retained, and made clearer to the members generally.

That too many practising architects of repute form no part of the Institute is much to be regretted; but the Council believe the number can be reduced by adopting the recommendations embodied in this Report, and by the individual efforts of the members.

With regard to the ex-President's suggestion, that architects of mature age and extensive professional experience hesitate to take their chance of election at the hands of younger men, and suggesting that the power of election to the class of Fellows be in future confined to the Council, at any rate for one or two years, the Council have not sufficient evidence to form an opinion on this point; but they consider that it is not necessary to make any alteration in the election of Fellows further than is suggested in the recommendations of this Report. The present system has, in the opinion of the Council, undoubtedly brought in much new and healthy blood, to the increased vitality of the Institute.

The Council therefore submit the following recommendations for the consideration of the General Body, viz.—

(A) That the proportion of one vote against, to two in favour, exclude from election, in place of one against, to four in favour, as at present.

(B) That the form of voting-papers be altered, so that the names on the list voted against have to be crossed out.

(C) That attention be called to the requirements of the Council as to the drawings, &c., to accompany an application for Fellowship.

(D) That a circular be issued to all Associates who have been over ten years in that class, pointing out that, in the interests of the Institute, Associates who are eligible should come forward for election as Fellows.

The following table shows the total number of subscribing members in all classes, and the amount of subscriptions received, in each of the years 1885 to 1895 :—

Year	Fellows	Associates	Hon. Associates	Total	Subscriptions		
					£	s.	d.
1885	371	708	97	1,176	3,067	1	0
1886	393	711	92	1,196	3,089	0	0
1887	398	708	91	1,197	3,124	10	0
1888	465	734	90	1,189	3,229	15	1
1889	501	790	86	1,377	3,837	1	1
1890	517	803	83	1,403	3,811	15	10
1891	567	821	73	1,461	4,196	17	0
1892	612	854	69	1,535	4,162	0	0
1893	615	844	69	1,528	4,402	16	7
1894	607	890	65	1,562	4,413	3	0
1895	588	933	62	1,583	4,547	11	0

The proportion of Metropolitan to non-Metropolitan members in the classes of Fellows and



Associates at the present date [6th ult.] is shown in the following table :—

Class	Metropolitan	Non-Metropolitan	Abroad	Total
Fellows	307	240	45	592
Associates	553	364	57	974
	860	604	102	1,566

The Council propose to submit a further Report after the views of the Allied Societies have been ascertained.

#### Discussion.

The President having formally presented the Report, and invited discussion upon the same, Mr. Wm. Woodward [A.] inquired whether the Council had prepared or considered the Report proposed to be submitted after the views of the Allied Societies had been ascertained. The President replied in the negative; and in the course of the discussion the Hon. Secretary stated that the Report before the Meeting had been sent to each Allied Society, with a request to consider the matter and communicate to the Council the views of the respective Bodies prior to the 1st October. Meanwhile, he added, the present Meeting had been convened with the object of obtaining the opinions of Metropolitan members.

The ex-President, Mr. Penrose, F.R.S., having intimated a wish to have the Report read to the Meeting, the four Recommendations A, B, C, and D contained therein were read by the Clerk, and the remainder of the Report was formally taken as read.

Mr. J. M. BRYDON [F.] thought a little explanation should be given of Recommendation B. The fact was, that a great many voting-papers were not used, simply because members knew nothing about the candidates, and did not wish to vote against them. The idea of the Recommendation was that the procedure in voting for candidates for membership should be similar to that adopted in the election of the Council and Standing Committees. Any names objected to should be struck out, and all the rest should count. Members would see the force of this Recommendation—because at present they need not vote for anybody unless they liked, and consequently all the names not known were voted against.

Mr. WILLIAM C. STREET [F.] suggested that members should write “yes” or “no” against the names of candidates they knew, and draw their pens through the names of those they did not know, the names thus struck out to be considered as not voted upon, and only the ayes and noes be counted.

THE PRESIDENT explained that candidates were nominated by the Council, who previously inquired into their qualifications, and therefore it was thought that, unless anybody had an objection, the better way would be to leave those names as they stood; if a member had an objection to any name, then he would cross it out.

Mr. ROBERT WILLIAMS [F.] said that, with regard to the preponderance of Associates, he thought it well for the Institute that there should be a larger number of Associates than Fellows, and for this reason: they were men who had passed the examination, and in these young men, at whose hands some “architects of repute” were afraid of being voted upon, lay their hope and the hope of their art; for if they could be got to be good and true men the whole Institute would benefit. With regard to the suggestion of bringing into the fold the “architects of repute” referred to, he did not think those gentlemen would thank them for the attention. It was proposed to make a pair of steps to climb up easily to the top of the wall, and then another pair on the other side, to get into the fold without going in by the door. He did not think architects of good reputation would thank them for that. They all knew that examination would not make an architect; but examination would do, as it were, the digging of the trench, in the mind of a young architect, into which he could put a good foundation; and woe be to him if he did not put in a good foundation of sound concrete and everlasting stone, instead of the wood, hay, and stubble of commercialism. But it was said that the architects of repute whom they wanted to bring in to the Institute had already their foundations dug, into which their footings had been put, and upon which a fine superstructure of reputation had been built. Why could not these architects tell them, or tell the Examiners rather, how they had made that reputation or built it? Surely if they had done such excellent work they could answer a few questions at the hands of the Examiners. If a man like himself, for instance, could answer them, surely these good men and true could answer them also. No doubt there were many such men outside the Institute, and it would be a good thing to have them in; but he did not think they should ask them to come in—he did not think they should tout for members. It was an undignified thing altogether to ask for members; members of the Institute should try to conduct themselves in such a way that outsiders would ask to become members of their Body rather than be appealed to by members to come in. [Observations referring to alleged breaches of the Declaration made by members are omitted.] The Meeting thought perhaps that illicit commissions were not accepted by architects; but he had read recently an advertisement requiring an architect for a middle-class school—and he considered it a shame to any body of architects, whether in or out of the Institute, that such an advertisement should appear—which stated that “the architect will not be allowed “any trade discount upon any part of the work “ordered.” What did that mean? It meant that some architects were in the habit of receiving trade discounts. It must mean so. The advertisers, being a public body, would not have put it in

unless they thought architects did so. Another point the Institute should strive to break down was the horrible practice of discount. A gentleman told him he had been paying his bill for grates—and in these matters unfortunately there were discounts ranging from 10 to 30 and 40 per cent.—and when he asked for his discount the merchant replied: “Oh! I have paid the discount to ‘the architect.’”

MR. EDWIN T. HALL [*F.*] said that if Mr. Williams knew of that case, and that the architect was a member of the Institute, it was his duty to represent it to the Council; and, under By-laws 22 and 23, such member, if proved guilty, would be publicly expelled.

MR. WILLIAMS, continuing, said that, on the other hand, he knew of an architect, a member of the Institute, who wrote for the post mentioned in the advertisement quoted, saying that if they took care to appoint no man but a member of the Institute, they would have an architect who at least pledged himself not to accept illicit commissions. Rather than seek to get men into the Institute, except by the right way, let members endeavour to keep to their Declaration,\* so that it might become a truism, apparent to all, that when the public had to do with a British Architect they had to do with an honest man. Architects should strive also to be honest not only in matters of business but in matters of art. Members might try to have an ideal—a high ideal, not a mere ideal that sought after commissions of 5 per cent. A high rate of commission was what was asked for; it mattered not how it was got. That was what they found out when they entered into competitions and so on. Did any of them know a case where a man had refused a commission? Of course the Meeting did not like that matter being discussed, for they had already settled it in their own minds. But he would suggest that they have an ideal—a high ideal: that material value should be the last thing they hoped for as architects; and in order that that might be impressed upon the minds of all he would have deeply sculptured over their portals the following legend: “Ye who ‘enter here must for ever abandon all hope of ‘making a fortune’! A true architect could not make a fortune. [Observations reflecting upon the professional practice of “architects of ‘repute,’” and of a landowner’s agent who practised architecture, not members of the Institute, are omitted.] He would conclude his remarks with a suggestion. In order that the public might be able to appreciate good architecture when they saw it, a series of lectures might be given

under the auspices of the Institute throughout the length and breadth of the land. There were men in every large town who could do this. Or lecturers could be sent from the Institute, and provided with lantern slides, showing all sorts of beautiful architecture, and also showing the mistakes that were made. Unless they had an art that appealed to the people they would not have one at all. This was not to be accomplished by building beautiful palaces; they must begin with the cottages—first make those beautiful, and in course of time the whole country would be beautiful. Architects should bind themselves into a kind of brotherhood—something after the manner of the brotherhoods that went about building the magnificent cathedrals of the Middle Ages, so that when there was a building to be erected it might be done harmoniously, which at present it was not. There should be perfect harmony between every man engaged on a building—from the man who mixed the mortar to the artist who painted the frescoes. They would then have beautiful buildings, and people would learn to appreciate them.

MR. C. H. BRODIE [*A.*] having asked for an explanation of Recommendation C, his attention was directed to the Regulation made by the Council, and approved by the Institute, under By-law 33, as follows:—

Every person desiring to be admitted a Fellow shall in all cases submit for examination by the Council, as evidence of his abilities as a practising Architect, working drawings, and, if practicable, photographs of his executed works, with such further evidence, if any, as the Council may require. Such drawings and photographs shall be accompanied by a declaration, signed by the applicant, that the buildings to which they relate have been designed by himself [see KALENDAR, p. 54].

MR. H. P. BURKE DOWNING [*F.*] understood the regulation to mean that the drawings to be submitted by a candidate for the Fellowship—that is to say the detail drawings and full sizes—were actually to be done by himself, not merely drawn in his office; and that it was intended that the general design of the building should be the candidate’s own (which could be evidenced by the production of his original rough sketches), and had not, as in the absence of such evidence might be the case, merely passed through his office and received his signature. Although a candidate might have a considerable reputation as an architect, it was only reasonable that the Institute should insist upon being satisfied that he had himself done some work.

MR. WOODWARD said that that could be secured by asking every candidate for admission to Fellowship to go into an empty room for, say, one hour, for the purpose of writing a few clauses of a specification, and making a drawing in plan and elevation.

MR. H. HEATHCOTE STATHAM [*F.*] did not understand what the precise point was of directing attention to that requirement of the Council. Had candidates for Fellowship shown

\* The part of the Declaration referring to this matter, made by both Fellows and Associates, is as follows:—“In consideration of my having been so elected, I promise ‘and agree that I will not accept any trade or other discounts, or illicit or surreptitious commissions or allowances, in connection with any works the execution of which I may be engaged to superintend, or with any ‘other professional business which may be intrusted to me.’”



themselves unwilling to submit the drawings required? There seemed to be some indication that that requirement of the Council had been neglected. Was that the meaning of the Recommendation?

THE PRESIDENT explained that some of the representatives of the Allied Societies were under the impression that anybody was admitted as a Fellow; and the object of the Recommendation was to call their attention to the fact that drawings were required to be submitted to the Council, with the statement that the buildings to which they related had been designed by the applicant himself.

MR. EDWIN T. HALL thought that the Meeting should be informed of what actually occurred in the Council, because he understood the Recommendation was to give information as to what was done, that it might be seen that there was a certain scrutiny exercised before any candidate was admitted.

MR. C. H. BRODIE said the object of his question was to ask whose attention was to be called to this requirement. Members knew very well the Regulation under the By-law; but the President said it was to be brought to the notice of the Allied Societies.

MR. JOHN SLATER [F.], B.A., said the fact was that the Council had every reason to believe that members of the General Body, who did not always read the notices in the KALENDAR and other Institute papers, were not aware that there was some kind of scrutiny. At any rate, the object of putting in Recommendation C was that the Council desired to take the Institute into confidence, and assure members that in putting forward men for election as Fellows the Council took the greatest possible care to find out that they had done works of some value, and that they were qualified as practising architects.

MR. ASTON WEBB [F.], F.S.A., said it had been suggested that he should say something on the matter, though he had not intended to do so. The whole question was an important one for the Institute, and as one of the members of the Council he would do his best to represent their views. It must be in the knowledge of every member that a difficulty had arisen in the election of Fellows; a difficulty which in his view had been thought too much of—he would not say exaggerated. At any rate, certain gentlemen had been proposed for Fellowship early in the year, but their election had been postponed till that evening, when he was glad to say they had been elected. When that difficulty arose the Council gave their attention to it, and appointed a Committee to consider on what basis the election of Fellows should in future take place; and that was the question members were asked to consider in friendly consultation with the Council. If members considered the basis suggested in the Report a wrong one, the Council would be glad to hear their views; or if they agreed with the course recommended, then the Council would be glad to know it. The Committee in their

deliberations had naturally taken into consultation the Allied Societies, so far as they were able, though, owing to the difficulty of their representatives attending from great distances, the progress was slower than it otherwise would have been; still, the Council were very much obliged to them for coming as often as they did. That fact, perhaps, somewhat answered a question which had been asked as to the sittings of the Committee. Sometimes they had been favoured with the presence of one or two representatives of the Allied Societies, and sometimes with one or two other members. Their views had not always coincided, and so it had been found difficult to arrive at a decision. It was for that reason principally that their Report was made an interim report, and in that condition awaited the further opinions they hoped to get from the Allied Societies, for the question having been once raised, it was desirable to settle it finally, and so avoid the possibility of difficulties arising in the future. The Council were all agreed that it was not advantageous to the Institute that this question of the basis on which Fellows were elected should be brought forward oftener than was necessary. They believed that the falling off in the last year or so in the number of candidates for Fellowship had arisen through uncertainty of the basis on which candidates were elected. The Council wished to put quite candidly before members their own feelings on this question, and for that reason statistics were given in the Report, together with a preliminary statement which preceded the actual recommendations of the Council. He could understand that some members, not knowing the points put to the Council, would not quite understand the reason for the statements contained in the Report. It had been contended, for instance, that the Fellows were falling off seriously, and that they were being outnumbered by the Associates. It would be seen, however, by the statistics that that contention was hardly justified, either as regards Fellows or Associates. Members could judge for themselves, by the definite figures brought before them, whether that was the case or not. On the other hand, it was quite clear that for the last eighteen months or so gentlemen had not come forward for the Fellowship in such large numbers as before. To his mind that was accounted for in several ways, partly no doubt from the uncertainty of the basis on which they were elected; but he thought also it was a very natural result of the examination policy for Associates, and that many men who in the past would have waited and come forward as Fellows without being Associates were now coming through the Associate grade, and would, he believed and hoped, come forward as Fellows when they were eligible. Some years ago it was decided to give the Associates a vote in the election of Fellows, and it had been suggested that that had prevented gentlemen coming forward for admission to that class. For his part he did

not believe that for a moment; and he was quite clear that, as the Associates had been given a vote, perfect confidence must be placed in them, and they must be credited with having acted to the best of their judgment, and supported those whom they considered worthy of being elected. He did not believe for a moment that there was any action on the part of Associates against candidates in the way that had been suggested. There was no evidence whatever, as had been pointed out at the Committee, as to who voted against certain candidates on one unfortunate occasion, when gentlemen, whom they would all have been very proud to see in the Institute, were not elected. That was a very unfortunate occurrence; but mistakes would occur; it had been brought forward very often, and the Council hoped and believed that it would not occur again. As to who took part in the affair there was no evidence whatever; it was a ballot, and the ballot was essentially a secret form of voting; and one could not tell, and had no right to assume in any way, who took the leading part in it. The fact, however, had to be faced, that candidates for Fellowship had fallen off recently. But he might perhaps shortly refer to the statistics in the Report, which showed that in 1885 there were 371 Fellows and 708 Associates, and a total subscription list of £3,067. In 1895 there were 588 Fellows and 933 Associates, and a total subscription list of £4,547, nearly £1,500 a year more than ten years before. Though he fully admitted the importance of the decline of Fellows in the last eighteen months, still he was of opinion that that was a very satisfactory report. The subscription list was higher than ever before; the total number of members was greater; and the only bad part was that in the last eighteen months the number of Fellows had decreased something like eleven. He was told that he was rather a sanguine person. Perhaps he was—he hoped so—but, at any rate, he could not see that the state of things was so serious as some appeared to consider. He was asked by a member why the Special Committee were appointed. Because the Council recognised that in the last few months there had been a falling off in the applications for Fellowship, and the Committee were appointed to ascertain if possible any remedies to obviate it. The most important point perhaps in the Report—and he thought it better that it should be clearly understood—was that the consideration of the applications for Fellowship should be continued on the same lines as at present; that is to say, that when a man came up for Fellowship he should submit examples of the work he had executed. It was also right that members should know that, in order to prevent a fear of any special school having undue influence in the consideration of the drawings or photographs submitted, the Council refused to consider an application unless there were at least fifteen of its

members present. There was always a special meeting to consider these applications, which only came before the Council four times a year; every safeguard, in fact, was taken that individual preference should have as little weight as possible in the consideration of the applicant's work. Then with regard to the recommendations made in the Report, and upon which the Council hoped to hear the views of members, they had come to the conclusion that in the ballot four votes to one were too many—that is to say, if four members were in favour of a man being elected and one was against him, the candidate ought not to be thrown out on that account. That was hardly fair. It was therefore proposed to reduce it to two votes to one. Then if there were two in favour of a candidate, and one against, he would not be elected. The reason for that was that in the natural course of events in an election of that kind a large number of votes were recorded in favour of a candidate by those who had not a personal acquaintance with him. The next Recommendation was as to the form of voting-papers, which had already been discussed, and he need say nothing more about that. With regard to Recommendation C, he had already explained what the requirements of the Council were. It was thought by many members that these requirements were not clearly understood. It seemed to him they were as small as they could possibly be, unless it was decided to have only one class of members. If they had two classes, and had an examination for Associates, there must be some sort of qualification for the higher grade. That was the view generally accepted. With regard to Recommendation D, that a circular be issued to all Associates, it had been understood that when a man had been an Associate seven years he would come up for election as a Fellow. There were often, no doubt, reasons which prevented his coming forward, and there was no desire to compel any one; but the Council thought it desirable to remind Associates of seven years' standing that they were now eligible as Fellows, and this might result in their coming forward. The Council were naturally anxious that all members qualified should become Fellows, and increase that rank. At the same time, the general opinion was that Fellowship of the Institute should be considered the higher grade. He himself was proud of being a Fellow, and he thought if they were careful as to the regulations of admission all would in time be proud of being Fellows of the Institute.

Mr. JOHN HEBB [F.] asked whether the object of Recommendation C was to encourage outsiders to come forward as applicants for the Fellowship, because he should have thought that the Council would always make that a requirement. [Mr. ASTON WEBB said that all such candidates were required to submit drawings] Then why should drawings be specially alluded to



—why not other qualifications? Was there any particular reason for that? [Mr. WOODWARD observed that the Recommendation said “drawings, &c.”] He did not see the object of taking the General Body into the confidence of the Council; it was a purely ministerial matter, which might be left to the Council. They were the judges of a man’s fitness, not merely from his designs, but from other considerations, and he could not see why particular stress should be laid upon drawings.

Mr. ASTON WEBB explained that applicants were required to submit drawings under the provisions of a Regulation made by the Council and approved by a Special General Meeting, under By-law 33, for carrying into effect By-law 3.

Mr. WOODWARD thought Mr. Hebb’s suggestion could be met if, instead of saying “That attention be called to the requirements of ‘the Council,’” Recommendation C read, “The following are the requirements,” and quote them. That would make it simpler, and one could at once see what the requirements were. The words at present were open to the observations of Mr. Hebb and Mr. Statlam.

THE PRESIDENT explained that members of the Allied Societies supposed that there was a desire to admit anybody as a Fellow without proper reference to his merits, and Recommendation C was intended rather for the information of the Allied Societies than for members acquainted with the usual procedure.

Mr. HEBB could understand that there might be very able men who had not much qualification in the way of draughtsmanship, but had designed a very good building; and it appeared to him that calling attention to this requirement was likely to deter rather than encourage a man to come forward.

Mr. BERESFORD PITE [F.] asked to be permitted to suggest what he thought must be in the minds of a good many members of the Institute in connection with the application for Fellowship. Since the very stringent and successful examination test had been applied for Associates, some years back, there was a large number of Associates who possessed the qualification that candidates for Fellowship did not possess, and consequently there was more inducement to join a class of honour, such as the class of examined Associates, than to join the class without any particular honour attached to it—the class of unexamined Fellows. That, he believed, was the view taken by a large number of Associates; and coupled with that was the fact that the Associates had now a vote, that a large number of them voted in the election of Fellows, and had expressed their determination, if they could, to obtain a policy which should insist upon every candidate for Fellowship going through the examination for Associateship before he applied for a Fellowship. That might further explain the hesitancy of a good

many members of the profession in applying for admission as Fellows. It seemed to him that the action the Council proposed to take was well calculated to remove both those obstacles to what perhaps he ought to call the flow of applications for Fellowship. In the first place, the Council drew attention to the fact that they did require evidences of competency, and something more than competency, because he need not remind the Meeting that drawings and photographs were required by the Council, fifteen members of whom must form the quorum for the examination, and that that examination was the test either for passing or not passing. It really therefore became an examination of the candidates’ qualifications for election as Fellows. Those qualifications were represented in the drawings and photographs of executed works, testimony being demanded to the fact that the applicant had himself executed them. Under those circumstances a good many gentlemen, who, he thought, would naturally hesitate before submitting themselves for the Associateship examination, and whom the Board of Examiners, he imagined, would not desire to see, ought to apply for the Fellowship. They would come in as a class of men who were certainly not let in by anything easier than Associates; and their position in the profession, having been in practice seven years, and their being required to submit working drawings and photographs, justified the Council in considering them, at all events, equal to Associates, and passing them on to the higher rank of Fellowship. And it was necessary that that should be explained, because there was, without doubt, an idea abroad that any one who would scorn to descend to the dirty tricks such as Mr. Williams had spoken of, and who was honest and capable, on agreeing to pay four guineas per annum would be admitted by the Council as a candidate for Fellowship without test of any kind. That was not the case at all. He admitted, as a matter of theory, that it was desirable to get a large number of subscribing members; but such were not the gentlemen who were at present put into the lists of candidates for Fellowship. If that fact were clearly understood throughout the country, so that members of Allied Societies knew that every one and any one was not admitted, but that the Council exercised a discretion as practical architects, scrutinising candidature for membership of the Institute, some inducement would be put before them to apply for the Fellowship as being an honour, a step in advance of the Associateship. At the same time, it would satisfy the Associates, who would undoubtedly have a grievance if they found that men who ought to go in for examination shirked it, but were simply admitted candidates for Fellowship by paying a higher fee.

Mr. BRODIE thought the Associates would be extremely grateful to Mr. Aston Webb, and to the Council who had issued this Report, for

the antidote thus given to speeches recently delivered in the provinces. Those speeches he did not care adequately to describe. They cast a slur upon the Associates which was altogether undeserved. As Mr. Aston Webb had said, there was no evidence at all that the Associates were mainly responsible for the rejection of certain candidates for Fellowship; he was inclined to think it was due to the weakness of some of the candidates themselves. It was well known to a large number of members—he referred to the time when there was a sort of holocaust of candidates for Fellowship—that one of the candidates put forward by the Council as fit to be elected had twice been up for the Associates' examination and failed to pass. If the Council could not avoid putting a man like that forward they should at once find a means of doing so; because in like circumstances there was always the risk that members acquainted with the candidates would demand a poll. They were not bound to specify the particular candidate they objected to, and there was no reason why they should. The consequence was, voting-papers were scattered broadcast over the land, and people, without meaning at all to do a good man an injury, simply refrained from voting for candidates they knew nothing about, with the result that many estimable candidates were rejected. Then, again, the Council had only themselves to blame, in the case of two men blackballed in the old days of the ballot, and blackballed for good reasons, because the candidates were members of a society that was entirely antagonistic to the Institute, and never ceased to try to belittle it. From his point of view, and that of a good many others, those men were rightly rejected. The Council in consequence legislated in a panic—and legislation in a panic was always bad and always recoiled upon somebody. In this case it had recoiled upon the class of Fellows and upon the Council, because since that time more Fellows than ever had been rejected, and in a great number of cases without proper reason. So, he said, the Associates especially had good reason to thank the Council for issuing this Report, and to thank Mr. Webb for his remarks that evening. He was somewhat concerned to hear the expressions of dissent at Mr. Williams's remarks upon the undesirable practices of some architects; but he could assure the Meeting that illicit commissions were taken, and taken by members of their own Body. He did not know, for instance, whether taking part of the fees of a quantity surveyor was to be considered an illicit commission—he should describe it as such—and it was constantly done, and done by members of the Institute.

Mr. BERESFORD PITE thought they ought not to sit there and allow any member to make the charges that had been made, both by Mr. Williams and by Mr. Brodie, without insisting that they should at once acquaint the Council with the names of those guilty of such practices.

Mr. Brodie had said he knew of cases, and Mr. Williams declared that he knew of cases. It was wrong that members should come to meetings and make those statements without sending in the names to the Council.

Mr. ROBERT WILLIAMS said that recently, when the Institute was discussing the new Form of Building Contracts, he wrote asking that it should be put into the new Contract that the quantity surveyor should be paid at all times directly by the employer. It was not put in, but he always put a clause to that effect into his own specifications. Now he would tell them how these illicit commissions were taken, even in that way, by, he believed, a considerable number of members of this Institute—those who had taken out their own quantities. Say it was £100 worth of quantities, £100 commission was added to the bill of quantities, and the contract sum plus £100 was the sum given in by the builder. The architect, if he took out the quantities himself, got a commission for the amount of the contract and the £100; he got £5 upon his own commission, that is to say, a commission upon a commission; and that, he considered, was an illicit commission unless the architect explained the matter to his client.

Mr. ASTON WEBB rose to a point of order. Mr. Williams, he said, had had a good hearing, but he persisted in making charges which, as Mr. Pite had said, should be sent in to the Council and considered by them. The evening, he submitted, ought not to be spent in that way.

THE PRESIDENT requested Mr. Williams to confine himself to the question before the Meeting.

Mr. ROBERT WILLIAMS denied that he was making charges; he thought it was the general custom.

THE HON. SECRETARY thought that if members knew for certain of these practices, they were just as much to blame as the guilty parties if they did not bring them under the notice of the Council.

Mr. WOODWARD wished to refer to an observation of Mr. Brodie's with regard to two members of another Body. The fact of those two members being blackballed resulted in an alteration of the by-law concerning the election of Fellows, and a more monstrous case, to his mind at all events, of blackballing had never occurred in any body of respectable men. Mr. Brodie knew well that simply because two gentlemen of good position—one of whom was then present, and, he was happy to say, a Fellow of the Institute—were members of the Society of Architects they were blackballed. He dissented entirely from Mr. Brodie's admiration of such a course, and trusted it would never recur in this Institute.

A conversation then ensuing on the difficulty of obtaining proofs of the charges that had been made, in which Mr. Brodie, Mr. Pite, and Mr. Slater took part, the President requested gentlemen to confine themselves to the question before the Meeting.



Mr. ARTHUR S. FLOWER [A.], M.A., F.S.A., referring to a point raised by Mr. Brodie, said that it would be a bad impression to get abroad that a candidate might try several times and fail in the examination, and then within a comparatively short time become a Fellow. If such a case were possible, a provision should be inserted in the regulations that candidates should have to wait a certain number of years after failing in the examination before they could come up for the Fellowship. He did not say such things happened—he had never heard of it before—but it would certainly interfere very much with the usefulness of the examinations, if even the suspicion got about that it was open to any one who failed, to come in shortly afterwards by another road.

Mr. ARTHUR CATES [F.] thought it very desirable that this question of failing at the examination and candidates being blackballed should be made clear. So far as he understood—and he had made some inquiry at the time—the gentleman against whom much energy had been directed did actually fail on examination some years ago. He had failed in one subject, and in one subject only, but he was sent back. He was engaged in considerable practice, and could not afford the time to come up again to pass through the whole of the examination. At that time the practice of relegating in the particular subject in which the candidate failed had not been adopted; if it had been, he had not the slightest doubt that the gentleman referred to would have come up in that one subject and passed with great credit, and would have done as much credit to the class of Associates, and ultimately to the class of Fellows, as he had since done in practice as an architect. His belief was that the action taken against that gentleman, which led to most unfortunate results, had done far more injury to the Institute both in London and the provinces than any other action which in their unwisdom they had taken would have occasioned, and he regretted exceedingly to hear the observations of Mr. Brodie on that subject, because they would tend to strengthen the belief that those who took that action were right. He had taken considerable interest in the present matter for many years, but with his knowledge of it he confessed he did not look upon the figures and statistics put forward in the Report in the favourable light Mr. Webb appeared to consider them. There was a certain speciousness about them which might, perhaps, justify such a favourable view: but did they really show a substantial accession of members either in the class of Associates or in the class of Fellows, having in view the actual accretion of members of the profession going on so rapidly throughout the country, in London and the provinces, and throughout the empire? If the Institute was to be a representative Body, a Body which should embrace within its ranks every reputable architect, then those figures were not satisfactory. There had been a most unfortunate

feeling with regard even to the Associateship, and however satisfactory, broadly speaking, the results of the examination might have been, however great the benefits every man who had passed that examination might have derived from the studies necessary to pass it, yet he could not consider the number of London candidates in any way represented the number of young architects in London who were preparing for or had already started the actual practice and profession of architecture. It was most important, he thought, that every member of the Institute (not merely the Council), every Fellow and every Associate who had passed the examination, should exercise his influence in every possible direction to secure the accession of that very numerous class at present standing aloof, and on whose absorption within the Institute its very existence as a representative Body depended. It had been said that for some reason or other the position of a Fellow was not esteemed as it should be—that it was merely a matter of paying the four guineas per annum. Mr. Webb had justly said that membership as a Fellow should be an honour of which the holder should be proud. He regretted to learn, from many communications he had received from the provinces and from London, that such questions as these were asked: “What is the use of it; what do I gain by becoming a Fellow of the Institute—what advantages are there?” The gentlemen from the country asked, “Why pay four guineas a year to enable the London members to enjoy the advantages of the Library and meeting-rooms?” Then there was a strong feeling that their annual subscription as country members should be reduced. He hoped, however strongly it might be urged, that such reduction would never be granted. It had been discussed in years past, and the conclusion arrived at, on very sound grounds, that, if anything, the advantage of membership was to the country rather than to the London members. He thought it should be strongly impressed upon the country members—and he hoped the Allied Societies would take note of the opinion he had ventured to express, and which he thought would be supported by others in the room—that if any advantage was derived from Fellowship it was the country member who benefited. As to the country members’ annual subscriptions, a great step had been taken in aid of the members. In the Allied Societies, established where it was considered desirable that there should be some combination among members of the profession in their own locality for local and personal reasons, with alliance to the Institute, every member of such a society had to pay a subscription, say, of one guinea a year. It should, then, be made widely known that the Institute contributed to the funds of every Allied Society throughout the kingdom the subscription, not exceeding one-fourth of the subscription to the

Institute, of those architects who, being members of the Institute, were also members of that Allied Society. So that, in fact, the provincial members had the advantage, if they were members of a local society, of becoming free members of that society, their subscription being covered by that paid to the Institute. Therefore, as a matter of fact, the subscription of country members of the Institute was only three guineas. He noticed in Mr. Henman's Presidential Address to the Birmingham Association—an Address which every one interested in this important question should read carefully—a very grave error, Mr. Henman having said that the sums paid by the Institute were contributed to the funds of the Allied Societies, and did not benefit the members who were members of the Institute. He had communicated with Mr. Henman upon the subject, and, if he understood him rightly, Mr. Henman had said that in the Birmingham Association they took the money and did not give their members any advantage in return. If that were the case, he hoped it would be brought before the Council of the Birmingham Association, and that in future the sums sent them by the Institute would be applied towards paying the subscriptions to the Association of those members who were also members of the Institute. Again, their great object must be to show that there was some good in being a Fellow of the Institute. If they succeeded in doing that, if they could show that the libels and slanders which had been mentioned—and he recollected that in the public press, some years ago, there were columns of the greatest rubbish written upon the question of illicit commissions—if they could show that such stories were unfounded, they would have accomplished a good deal. Or if there should be any solid basis for them, let those men who knew it come forward, produce the proofs, and satisfy the Council; and he would undertake to say there would not be an instant's hesitation in at once expelling the guilty member from their ranks, and that such expulsion would be publicly announced from the Chair at the next General Meeting and recorded in the next issue of the *JOURNAL*, as provided for in By-law 23. It was, he felt, a very sad thing that gentlemen in the country, and some of them Fellows of the Institute, should declare that membership of the Institute was of no account. How could they expect their ranks to be increased? How could they expect the Institute, its proceedings and its constitution, to be respected anywhere when prominent and to a certain extent active members denounced it in that way? If there were faithless men within their ranks who, perhaps with a view to save a guinea a year, were content to make statements of that kind, then things were in a very bad condition for the Institute and for the profession. Then they had also to consider the large

number of men who were growing up now, and had been growing up for years, outside the Institute. The Institute, he assumed, was intended to comprise within its ranks every architect, every reputable architect, and he used the words "reputable architect" advisedly, because those two words covered every possible requirement. It had been said that there might be some question about the production of drawings. But it was not absolutely necessary that an architect should be a fine draughtsman. There were many fine draughtsmen who were not architects. There was a great distinction to be drawn between them; and there was at the present time in London a very remarkable example of the difference. They had seen a great public work handed over to able men on the ground of their beautiful drawings, but the design, on being considered, did not certainly equal the merit of the draughtsman-ship. It was a very grave question indeed whether they were to make Fellows for draughtsmen's work and for smartness of drawing, or for general capability. There was no truer word said than what had fallen from Mr. Hebb, that there were many people, able designers, who were not brilliant draughtsmen, and that must be considered. Now, looking at these recommendations as a member of the Council, he did not raise any objection to them; but, as he had said at meetings of the Council, he considered that this interim Report was a merely temporising expedient; it was a graceful and gentle way of getting over a difficulty, and for the time being it might be sufficient. But they must look further than that—very much further. He had hoped that the Committee to whom the question was entrusted would have taken a bolder and more statesmanlike view, and would have faced the real and the great difficulty. They had established, and had carried out with considerable success, an examination for the Associates. Their Charter provided in Article 3 for the establishment, after a given date, of an examination for Fellows. The regulation which required the production of drawings, and so on, had been adopted for the purpose—he would hardly say of satisfying that provision—but of, perhaps, evading the question, filling up the time, and filling up the interval; but during that interval a very serious state of things had grown up. There were a large number of architects entering upon practice who said, "I will not trouble myself about the Associates' examination; I will wait to be a Fellow, if I think fit." Then, years after, he said, "There is no inducement. My friend So-and-So is not a Fellow, and he does not get less business, and would get no advantage from it. My other friend is a Fellow, and he has not half the business that I have, and I am not a Fellow." But that was a very false way of looking at it. The Institute was a chartered Body, intended to be representative of



the profession, and to work for the good of the profession; and it was a mean and shabby thing for men to say, "We hold off from it because we do not get any good from it." Of course they got no good from it, because the Institute was not strong enough to give it them. If, in addition to a good Library, the Institute had good premises and the good income that it ought to have, much good might be done. Even now the rooms and Library might be much more used; facilities might be given for their use as writing and consultation rooms, and for becoming a London centre available for the convenience of provincial members, and effective steps in that direction would certainly be appreciated. Before concluding, he should like to be permitted to read a letter which he had addressed to the Special Committee who had sat on this question. The letter was as follows:—

*To the Chairman and Members of the Fellows Special Committee R.I.B.A.*

7, Whitehall Yard, S.W., June 23rd 1896.

DEAR SIRS,—The very grave importance of the questions referred to your consideration, affecting the future prospects, and perhaps the effective existence of the Institute, must be my excuse for submitting to you the following observations.

I would urge that the first principle to be determined is, how shall the qualifications for Fellowship be defined and limited?

These qualifications are clearly set out in Article 3 of the Charter, and the regulations of the By-laws cannot justifiably be used to impose further restrictions.

Is it desirable that the Institute should comprise within the ranks of Fellows *all practising architects* qualified under the Charter; or should we adopt such restrictions as to make that class *a select few*?

There cannot be a question but that the spirit and the letter of the Charter intend that the Institute should comprise all reputable architects throughout the United Kingdom, and the Colonies and dependencies of the Empire, who may comply with the conditions imposed by the Charter.

To accomplish this must occupy some time, and until this absorption within our ranks of all qualified and eligible architects, or the majority of them, is accomplished, it would be undesirable, improper, and unjust to set up the further restrictions authorised by Article 3 of the Charter.

To now, without notice of long standing, impose conditions which would exclude a very large number of architects who would be worthy members, many of whom have in recent years been deterred from coming forward as candidates for election, by reason of the unfortunate action of a few Associates, would be a serious mistake, and cause irreparable injury to the Institute.

For a period of five years or more, every inducement and facility should be afforded to the large number of qualified men now standing out to come in and become Fellows, and an effective measure should be adopted to secure the election of such candidates, and to preclude the possibility of the repetition of the unfortunate incident which has necessitated the appointment of this Committee.

After the expiration of the prescribed time the restrictions authorised by Article 3 of the Charter should come into force, and one of the qualifications required of a candidate would be the having passed some examination, to be defined, either as for Associate, or in the case of older men, who may not have taken advantage of the years of grace, some other examination suited to their circumstances, with power to the Council to exempt in special cases.

Thus, in time, both aims will be attained, the Institute will have absorbed within it all the worthy and qualified architects of the British Empire; and, at a not distant date, such qualification will be required of candidates for Fellowship as will place "Architectural Education" on a firm basis and extend its beneficent influence throughout the land.

The scheme of "Allied Societies" was devised expressly to aid in the bringing in of the provincial architects, and the opportunity appears to have now come for securing that accession of Fellows, by which alone the Institute can be put once for all on a firm and sure basis and begin to fulfil the objects for which the Charter was granted, and to take that place as the actual representative Body of the architectural profession which it certainly does not at present really occupy.

Those who have recently been actively moving in this matter will, I hope, appreciate the essential importance of *now at once* strengthening the Institute, so as to enable it to take and hold the position it should occupy, and will consent to withdraw for a time the restrictions they desire to impose, but which, under more favourable circumstances, would, a few years hence, do as much to strengthen the Institute as their immediate imposition would injure it.

To attain this desirable object the only change in the detail of our constitution which would be required would be the necessary modification of the rules as to election, from those suitable for a club, to others appropriate to a great professional institution, in which mere personal views and feelings should not be allowed to have the opportunity of controlling membership.

It is to the Allied Societies we must now look, and I hope that the views I have here expressed may be acceptable to them, and may be adopted by you as the basis of your report.

He need not apologise for reading that letter, or for the views expressed therein, because it was well known that from the earliest period of his connection with the Institute he had always looked forward to the qualification by direct examination for every member. He was satisfied that it would be impossible for the Institute to obtain and maintain the position it ought to occupy unless the same conditions which were imposed upon candidates for Associateship were imposed upon the candidates for Fellowship, if they had not already satisfied them. It might be said that it was a hardship to expose a man in practice to an examination. He happened to have known gentlemen, some in the enjoyment of a practice which he thought many present might fairly envy, who had come up for the Special Examination with comparatively little preparation, and had passed in a satisfactory manner. More than that, these men had acknowledged that the direct study they were obliged to give to certain subjects had opened before them ground previously unfamiliar to them, and they had derived, at a small sacrifice of labour and study, the greatest advantage from their studies for that examination: it was important that this should be borne in mind. Associates who had qualified by examination would support him in the statement that every man who had passed the examination had derived the greatest possible benefit from it. He also declared that every man desiring to be a

Fellow, after an interval of a few years of grace, would derive the greatest possible advantage from passing a personal examination. It should not be a mere examination of his drawings, in which questions of taste and questions of draughtsmanship might arise, both of which might be very well eliminated; but an examination so framed as to take into account his experience and professional knowledge in both design and practice, anything, in fact, but a student's examination. Such an examination would undoubtedly be a great advantage to him, a great advantage to the profession at large, and a great advantage to the Institute. He was convinced that the only course before them—and the sooner it was adopted the better—was to declare that in five years, or earlier, no man should be eligible as a candidate for Fellowship unless he were either an Associate or had passed such an examination. They must go forward to attain that end. They might tide over the difficulty for a time, but every year that declaration was deferred, the difficulties were increased, and would increase in greater proportion till the remedy was applied. It was greatly to be lamented that, instead of adopting that regulation about examining drawings some years ago, they did not then, as he had urged upon the Council, adopt the principle of boldly facing the question. If the Institute was good for anything at all, surely it could say that within so many years no man should be a Fellow unless he had shown himself qualified by passing an examination. If that could not be done, then the sooner they closed their doors, sold off their books, and vanished the better!

MR. W. H. SETH-SMITH [F.] said that, while agreeing with much in Mr. Cates's very admirable speech, he must dissent from him when he declared that the Institute was not respected.

MR. ARTHUR CATES observed that he did not say that the Institute was not respected, but that many of their members were in the habit of saying that it was not respected, and that there was no advantage to be derived from membership.

MR. SETH-SMITH, continuing, said that on the whole, judging from the correspondence one saw in the foreign as well as the English papers, he thought the Institute held a very high place. It had been the fashion, no doubt, in certain quarters to run down and criticise the Institute, and perhaps at one time he had taken part in that criticism. He held views now which he held then—that at some time it might be expedient for the Institute to go much further than it had gone in establishing examinations. To his mind the principle undoubtedly was right, and great work had been done; but a good deal more was required in the same direction. As a matter of fact, they had now instituted an examination for the Fellowship, and if the Council could, in their further report next Session, give members throughout the country some clear idea as to what that examination consisted of,

what drawings as well as photographs had to be submitted, and what kind of testimonials as to capability and experience every candidate was expected to give, he thought a great deal would be done towards righting the present condition of things. But he considered—and he felt sure all the Associates would join him in this—that having elected a very capable and highly cultured Council, all of them men of eminence in the profession, they should trust them, and give them their absolute confidence. They might make mistakes, as every council and every individual did; but they should be trusted to nominate Fellows on the examination which had been instituted, and if members could inspire confidence both in the kind of examination which was set for candidates for the Fellowship, and at the same time point out that a constitutional Body such as theirs must trust its executive, they would have done a great deal towards getting over their difficulty.

MR. J. M. BRYDON said he was glad to hear Mr. Cates and Mr. Seth-Smith bring the discussion back from the personal to the broad question the Meeting was called to discuss. The real crux was, on what qualification were Fellows to be elected? That was the point referred to the Committee, and that was the point upon which the Council wished to get the views of the general body of members, that they might help the Council in coming to a decision that would be acceptable to the general body, and not only enhance the interests of the Institute, but, what was of far greater importance, the interests of architecture itself. A great deal had been said that evening about the examination of candidates, and he was glad to hear from Mr. Pite, as representing the Architectural Association, that the examination of the work of candidates for Fellowship to a certain extent met the case. Mr. Williams, in his remarks, had said two very wise things—one was that no examination would make an architect; the other that when a man came up for Fellowship he should be an architect. Those were two very different things. The policy of examination, whether right or wrong, was not under discussion; they had to find out whether young men entering the profession had got in them the makings of an architect. That was a good and excellent thing, and had produced excellent results—whether the results were the best that could have been produced was another question. But in the case of a candidate for Fellowship, it was not a question of making an architect, but whether the candidate was an architect. There had been a great deal of misapprehension on that point on the part of Associates—certainly on the part of those who signed a certain memorial that came before the Council and the Special Committee. This memorial laid down two propositions—first, that candidates for Fellowship should be elected from the ranks of Associates; and, secondly, that the Council might nominate men of such qualifications that they could be



elected to that class without any examination. It seemed to him that these propositions were put forward under a misapprehension; the memorialists were seemingly not aware of the examination that took place as a test of the qualifications of candidates; and that, he believed, was the reason that attention was called, under Recommendation C, to the requirements of the Council in the matter of drawings. He had been rather surprised at the great stress laid by speakers upon the word "drawings." It was not an examination of drawings—nothing was further from their intention than to elect a man for his drawings; and he was astonished that a member of so many years' standing as Mr. Cates should lay stress on that point. It was for his designs that a man was elected; and a candidate was expected to sign a declaration that he did the work himself, thus making it almost impossible for a man who employed ghosts to get in as a Fellow. It seemed to him that the whole thing lay in a nutshell. They had first an examination for young men desiring to become Associates—that is to say, applicants had to show that they possessed certain qualifications to become Associates; but before they could become Fellows, which he held was the higher honour—an honour every Associate should strive after—they must show that they could do really good work. The quality of his work was the sole test of a candidate. It did not matter whether he had passed an examination or not if he could do the work; all the examinations in the world would never make him an architect if he had not got it in him. Therefore the test for the Fellowship was the candidate's having done work up to a certain degree of excellence. Mr. Aston Webb had put it very clearly before them, that this was not a question of prejudice or a question of style. It was impossible with fifteen or more members of the Council to get up a cabal to exclude a man because he did not design in a particular style. He hoped they were all too broad-minded for that. A man was judged solely on the quality of his work. If it was made perfectly clear that to become a Fellow of the Institute was to hold an honour worth striving after, then they would probably find men anxious to become Fellows; and to have men anxious to become Fellows was what they wanted. Then there was another point. The paucity of men coming up for election was of course one of their troubles; and if he might be permitted to say so the examination for the Associateship was partly accountable for that, and for this reason—there were plenty of men in the country who, for the sake of being members of the Institute, were quite willing to pay two guineas, but were not willing to pay five guineas entrance fee and four guineas a year for a place they did not enter one day in the year. So that, after all, there was a great deal in the question of subscription. Men could not be nominal members of the Institute as before, but they must become Fellows,

and pay a comparatively large sum for a place they never entered. Representatives of Allied Societies had in fact insisted before the Committee that country members did not get value for their money. He was of opinion that it was the duty of the Institute to remedy this state of things. As a matter of principle, he thought they would get a great many more men seeking admission as Fellows if they reduced the subscription for country members. As a matter of fact, the Institute had admitted this principle of a country subscription by returning to members who belonged to Allied Societies twenty-five per cent. of their subscription to the Institute. Why stick at members of Allied Societies? It was desirable to get everybody in, whether members of Allied Societies or not. Why, then, not concede at once a reduction of subscription to all men beyond a certain radius of London? That was one point urged before the Committee. Another was, that if the Institute could be made to a certain extent the headquarters where men could make appointments and see their clients, that would be an assistance. Those were points upon which the Council would be glad to hear the views of members, to help them in the preparation of the final Report, to be brought up next Session.

A conversation, broached by Mr. Hugh Stannus [F.], having then ensued on the desirability of entering on the Minutes that both Mr. Williams and Mr. Brodie had been unable to give to the Meeting the names of those whom they charged with illicit practices, the President intervened and the matter dropped.

Mr. E. W. HUDSON [A.] said that the Meeting had just elected unanimously ten gentlemen as Fellows, which he thought showed that much confidence was placed in the investigations made by the Council into candidates' qualifications. It was true that some of them were, as Associates, well known to members present, but some were entire strangers from the provinces. Members had taken it for granted that drawings and photographs of executed works of a satisfactory nature had been submitted. He noticed, however, that in some of the nomination papers there were blank spaces wherein should have been inscribed the name of a Fellow who had supplied a testimonial of his personal knowledge of the candidate and of his works. He did not know whether that was a clerical omission, or whether the requirement had been waived, but supposed that such testimonial was included in the *etcetera* of Recommendation C of the interim Report now under consideration.

THE PRESIDENT explained that these particulars were given on another form, called a Separate Statement, and that it was usual to put on the board only the paper containing the names of the candidate and of his proposers, &c.

Mr. HUDSON, continuing, thanked the President for the details, and thought the unanimity of this election augured well for architects who might be aspirants for the honour of Fellowship.

It showed a conciliatory spirit on the part of Associates who felt they had a grievance in the perpetuation of a (supposed) higher grade without the onus of examination having to be submitted to. He did not for a moment imagine that these gentlemen had any other object than what they deemed the best interests of the Institute at heart, and by virtue of age he felt he could say this without bias, although he belonged to their grade, and was contented with it.

MR. WOODWARD said there was one point he should like to suggest for the consideration of the Council, namely, whether or not in rejecting a Fellow the Council should state specifically the reasons of the rejection.

MR. BURKE DOWNING suggested that there must be known to members many men in practice—really good men—whom they would like to see in the Institute, but who might not be known to the Council, nor be members of Allied Societies, and would not, perhaps, know what was going on. He thought if it were open to Fellows and Associates to communicate to the Council the names of such gentlemen as being desirable candidates, and on that recommendation the Council were to invite them to submit themselves for candidature, they would look upon it as an honour and be inclined at once to come forward. With regard to what he had said about drawings, he did not for a moment suppose that the Council would examine closely a candidate's actual draughtsmanship; but one could hardly conceive of an architect who, when he had been entrusted with the design and carrying out of a building, did not at any rate make the rough sketches of the design for his assistant. He knew men who were not draughtsmen at all, but who possessed a most accurate knowledge of design, proportion, and details; but these men could all of them get out their full-size mouldings. Photographs might mean nothing, simply that the architect had very good assistants. He thought a candidate ought to produce details with full-size mouldings and rough sketches of elevations. In the case of a man who had been long in practice, it would probably answer the purpose if some of his own earlier work were submitted.

THE PRESIDENT thought that all the points had now been discussed; but he hoped that members who had not been able to join in the debate, and who had any particular views to advance, would give them the benefit of such views before the Council considered their final Report.

In accordance with the President's permission thus freely given at the Meeting, which was a late one, an Associate present has since put into writing the further remarks he would have made had time permitted, as follows:—

MR. E. W. HUDSON [A.] was glad that the Asso-

ciates were to be taken into confidence, and believed some of them could give the Council valuable help as regards the reputation of candidates in cases where credit for executed work was due only to a paid designer and not to the employer, who had been known to change the style affected whenever he changed his draughtsman. It could hardly be desirable to augment members from the ranks of mere social influence or business success. He was pleased to see that the Council had not adopted the suggestion that it should elect Fellows, and the Institute's veto right be abrogated. Enforced "Fellowship" was contradictory and impossible, even if the Charter would permit such a course. He trusted that Mr. Arthur Cates, in his anxiety for the progress of the Institute, had taken too serious a view of the deterrent effect of the blackballing incident, and he believed that in future architects of age and experience would prefer to enter the fold by the Associates' examination rather than by "climbing up some "other way." They could thus cast out the fear of rejection "at the hands of younger men." He could see no reason, if it were any honour at all, why a successful man should not devote leisure or even sacrifice a little time or money while he brushed away the rust, revived his data, and renewed his reading, &c., so as to pass the examination, even after he had been twenty years in practice. If he had no student knowledge to revive, or if he could not design, he had better stay away till he could. But having once passed the Associates' examination, there need be no seven years' probation in such case before he could proceed to the higher grade. He saw nothing *infra dig.* in entering the lists with younger men; but if his own assistant happened to be up for examination at the same time, no doubt he could defer trial till the next examination, to avoid invidious comparison if he were relegated. One discomfiture should not daunt a man. If he might be permitted to say so, he had felt more satisfaction in passing the Associates' examination in middle life, rather than appealing for a Fellowship. Having done so, it would be unjust not to bear testimony to the generous way most of the Examiners received such a candidate (of course, without reducing an iota of their requirements) to put him at his ease, and, *e.g.*, in the *viva voce* part of the examination, conceding something in the mode of dealing with a brother professional whose experience and opinions did not necessarily fit in with their own, or to whom, it might be, his favourite style was *anathema maranatha*. To Mr. Arthur Cates's interest in and encouragement of candidates it was a pleasure to refer. He read in professional journals—and he feared there was some truth in it—that successful architects were indifferent, and the difficulty of making them see any advantages in membership had just been referred to. For his part, he should



never suggest they were of a financial order. It certainly facilitated business intercourse in some degree between members. It gave a slight weight to evidence delivered in the Law Courts or before an arbitrator. The Library was a privilege for young men, no doubt. Personally, he had used the National Library at the British Museum for study during thirty years, and he felt more at home there in referring to any books he did not himself possess. Then there were the Scale of Charges, the Articles of Pupilage, Directions *re* Ancient Buildings, and Competitions, and, should he say, the new Conditions of Contract? He was asked years ago by clients: "What are your charges; are you a member of the Institute?" Well, he did not feel it quite right to say, "I adopt its scale of charges, but am not a member." That did not seem quite fair. If one benefited by its labours, why not take one's stand with it? At the first opportunity he did so. He regretted having to speak of himself, and only expressed an individual opinion, but thought others similarly situated might adopt his plan. In reconciling differences as to what constituted "an architect of repute," there were two classes between whose views it was difficult to find a *medias res*. The older voters were almost "Universalists" in hope; the younger voters perhaps had a tendency to make of the Institute an eclectic society, restricted to men who held similar art views to their own; which would be rather rough on the all-round man. Though both had his sympathy, he feared on the question of design, if the latter class had entire sway, men would be blackballed for their designs who in all probability, in the changes of fashion in architecture, would in the course of time carry all before them. Imagine, if the young men of a generation back, who had been taught to see no salvation outside fourteenth-century Gothic, had been able to vote upon the election to Fellowship of some of our leading architects, who then were coquetting with Renaissance, and had submitted designs with broken pediments, rustics, columns hoisted upon brackets, with arches supporting nothing, he would not have given much for the chances of these candidates, and believed he would have added his sable mite to their defeat without feeling the least injustice was being done. While architecture was subject to mode and fashion, much moderation and breadth of thought were necessary in deciding as to "repute," for the condemned of to-day might become the applauded of to-morrow, and *vice versa*. While there were desirable men outside who did not want to come in, there were many besides who were free-lances, and would never serve architecture in any combination with an organisation like the Institute; and it was, he feared, mistaken solicitude to urge them to do so. In some cases they entirely disclaimed constructive and business operations, *ergo* were hardly "Architects" in the Institute sense. In

future, perhaps, a new class of membership for such as these—Artist-designers—might be the right thing, without technical examination, and then Fellowship through Associate examination only be obtainable. When it was definitely known that they had burnt their boats and Fellowship was only to be taken by force, he thought there would still be men of grit in full practice who would feel a positive challenge to go in and win the scarf, even if they had won their spurs. But while elections remained on present lines, he suggested that the addition of about six Associates to assist the Council by inquiries as to reputation and practice of candidates, *i.e.*, as a joint committee (before the Council sent up names to a General Meeting), would work harmoniously, and avoid all seeming scandal or heartburning by rendering it almost impossible that a candidate so approved could be rejected by it. This would show in a very practical way the confidence referred to by Mr. Aston Webb. Apart from the question of maintaining revenue, it did not seem an unmitigated evil if architects were not increasing in undue proportion in an old country where many must stand a poor chance of attaining lucrative practice. He would rather see annual subscriptions raised than any lowering of the standard hitherto required.

## REVIEWS. XLV.

(125)

### THE LAW OF EASEMENTS.

*A Treatise on the Law of Easements. By John Leybourn Goddard, Barrister-at-Law. Fifth Edition. Large 8o. Lond. 1896. Price 25s. [Messrs. Stevens & Sons, Ltd., 119-20, Chancery Lane.]*

Mr. Goddard's work on the law of easements has been many years before the world, and the world has shown its appreciation of it by buying up four editions. The fifth edition has now appeared. It follows precisely the lines of those preceding it, the only difference being that all the decisions of the Courts on points connected with easements reported since the last edition have been duly noted, and where comments were desirable duly commented upon. Under such circumstances it would be absurd to review the work as if it were one newly delivered from the author's brain. Long ago it has taken its place as a standard treatise by virtue of that best evidence of merit, the favour of those for whom it was written.

Among these, architects can scarcely be said to stand. The law of easements is no doubt of much interest to architects, and some knowledge of it is necessary to enable them to discharge satisfactorily their duties to their clients. Mr. Goddard's treatise, too, is as clear and free from technicality as the nature of its subject-matter permits. Nevertheless, it is essentially a lawyer's book. It deals with the law of easements exhaustively, and

with a detail which can be thoroughly useful to lawyers only. And architects should beware of regarding themselves as lawyers, and more especially of doing what is properly lawyers' work: they will not be paid for it even if they do it well, and if they make mistakes they may have to pay for them. The study of so complete a work as Mr. Goddard's is not necessary for the proper discharge of their duties, and it may induce them to discharge duties which properly are not theirs, to their own and their clients' hurt.

The knowledge of the law of easements required in an architect is not extensive. It usually is needed chiefly when he is advising a client as to the development of a building estate, or as to the alteration of existing buildings. To do this satisfactorily, he should know enough of the nature of easements, and of the manner in which they may arise, as to be able to say whether any probably subsist affecting the estate or buildings in question. Once he comes to the conclusion that probably some such do subsist, he should warn his client and leave it to him or his solicitors to ascertain definitely the real state of things. If the client declines to do this, then the responsibility is on his head, and the architect may proceed to lay out the estate and prepare plans of the alterations, feeling assured that if litigation subsequently and consequently arise he is not to blame. Occasionally in carrying out the works an architect may make himself liable personally for acts done in violation of rights of easement. Thus, by directing the removal of one of his client's houses he may make himself liable for letting down an adjacent building which has acquired a right to support thereon. But such cases are rare, and actions against the architect are rarer still, for two reasons. In the first place, the architect is personally liable only where he personally did, or directed to be done, the wrongful act (*Monks v. Dillon*, 12 L. R. Ir. 321). And in the second place, practically in all cases where the architect is personally liable the building owner is liable too, and the person injured usually prefers to go against him.

The easements dealt with by Mr. Goddard are easements in the strictest sense merely. These are to be distinguished, on the one hand, from what are sometimes called natural easements, and, on the other hand, from what lawyers call *profits à prendre*. By natural easements are meant legal rights ordinarily incident to the ownership of a plot of land, and necessary to the proper enjoyment of it, such as the right to have your soil supported at its natural level by your neighbour's soil; the right to have the natural flow of a river coming from your neighbour's land continued unchecked and uncontaminated; or the right to have the air coming from over your neighbour's land left pure and wholesome. These rights are natural parts of the right of ownership, and do not need to be acquired by special grant or by prescription, while the right

of a neighbouring owner to infringe them can only be so acquired, and when so acquired is in the nature of an easement over the land which they affect. *Profits à prendre* are rights to take part of the actual benefits or profits of your neighbour's land, such as the right to put your cattle on his pasture—called common of pasture—or the right to cut turf on his land—called common of turbary. These rights usually arise out of the tenure of the parties enjoying and suffering them. Easements, strictly so called, are rights specially annexed to the ownership of one tenement (called the dominant tenement) which infringe the full ownership of another tenement (called the servient tenement), but which do not entitle the owner of the dominant tenement to any actual profit out of the servient tenement. This definition is practically that adopted by Mr. Goddard from the old definition given in *Termes de la Ley*, though somewhat less technical in expression.

The rights answering this definition are rights to air coming through a definite opening from your neighbour's land to yours, rights to light coming through a definite opening from your neighbour's land to yours, rights to an artificial supply of water coming through a definite channel from your neighbour's land to yours, rights to have buildings on your land supported by the land or the buildings on the land of your neighbour; and lastly, the right belonging to the owner of one plot of land to walk, ride, or drive over his neighbour's land, or rights of way, as they are called. All these easements have many points in common, and Mr. Goddard's mode of treating of them is to state first the points on which they all agree, and then deal separately with each particular class. This saves much repetition, and brings out distinctly the differences in their nature, mode of acquisition, and mode of extinction.

The easements with which the architect is most commonly concerned are rights to air, rights to light, and rights to support for or by buildings. It would be out of place to examine here at any length any of these, but one or two remarks on some of them may not be without interest.

As Mr. Goddard points out (p. 39), it is singular how seldom the Courts have been asked to interfere for the protection of rights to air as distinguished from rights to light. This may, as he suggests, be due to the fact that wherever there is a passage for light there is one *ipso facto* for air. But the converse does not hold, and of late various cases have come before the Courts where the right to air alone has been in question. These cases have settled pretty definitely the nature of an easement of air. It has been held to be in many respects similar to an easement of light and an easement of water. Just as one can acquire an easement in water coming from his neighbour's land only when the water flows in a definite channel, or in light coming over his neighbour's land only when it comes through a definite aper-



ture, so he can acquire an easement in air coming over his neighbour's land only when it comes through a shaft or passage or other certain opening. He cannot acquire, for instance, an easement to the wind to turn his windmill (*Webb v. Bird*, 10 C. B. N. S., 268), nor to the air necessary to make his chimneys draw (*Bryant v. Lefever*, 4 C. P. D., 172). He can, however, acquire an easement to the flow of air through his window (*Aldred's Case*, 9 Rep., 57b, 58b), or through an old well into a cellar (*Bass v. Gregory*, 25 Q. B. D., 481), or through a ventilator (*Hall v. Lichfield Brewery Company*, 49 L.J., Ch., 655). And just as, in the absence of a special agreement not to do so, the owner of one plot of land may dig a well in it that will drain his neighbour's land of all the water that lies in the soil (*Chasemore v. Richards*, 7 H. L. C., 349), or build a wall on it that will effectually deprive his neighbour's garden of the light necessary for its fruitfulness, so he may erect an obstruction to the current of air to his neighbour's back-yard, even though the result of the stagnation of air so caused may be to create a nuisance (*Chastry v. Ackland* [1895], 2 Ch., 390). In all these cases the air, light, or water does not come through a specific channel or aperture, and therefore, however long it may have been enjoyed, no legal right to its continued flow arises. The owner of the land over and from which it comes may at any time and for any reason obstruct it, even though the reason be that he wishes not to improve his own land but to damage his neighbour's. See the *Mayor &c. of Bradford v. Pickles* ([1895], A. C., 587), where the owner of land adjacent to the Bradford Waterworks sank a well in such a way as to prevent the water percolating through his land into the waterworks, not, it was alleged, with the object of using this water, but with the object of compelling the Corporation to buy his land:—Held that, whatever might be his motive, he was entitled to do so.

As the important thing usually to an architect is whether or not easements subsist affecting his client's land, he should know how such easements may grow up. A difference in this respect exists between rights to light and water and rights to air and support. The former are within the Prescription Act; the latter are not. Accordingly an indefeasible right to light arises after twenty years' user without the written consent of the owner of the servient tenement and without obstruction during that time for one year or upwards, while such a right may be acquired to water in forty years, or a right not completely indefeasible in twenty years. But it would seem that to gain an absolutely indefeasible right to air or support it must be shown to have been used from time immemorial. A title sufficiently good in most cases arises after twenty years' user without consent; it can only be defeated, if at all, by showing that the user originated as a matter of fact within legal

memory—that is, since the reign of Richard I.—and, what is harder, that it originated in an unlawful manner.

Strange to say, it is only recently that the right to support of buildings by the adjacent soil or buildings has been for the first time judicially held to be capable of being acquired by long user or prescription. The case in which this was established was the great case of *Dalton v. Angus* (6 A. C., 740), which was taken to the House of Lords. The question there involved was, as Mr. Goddard says (see p. 307), “the most perplexing” which has ever arisen with regard to the law of “easements.” The difficulty was to bring the acquisition of such a right by long user (which had long been tacitly recognised) within the ordinary rules relating to the acquisition in that way of easements generally. The reasons given by the Judges for their decisions were extremely various, and this is not the place to discuss them. Suffice it to say that in the result it was held that the right to support for buildings from the adjacent soil might be acquired at common law by twenty years' uninterrupted user; or, to be more exact, any house which has stood for twenty years is entitled to such support from the adjacent soil as is necessary to keep it from sinking, quite independently of the question as to when such support became necessary or how long the house has been so supported. This decision was shortly afterwards followed in *Lemaitre v. Davis* (19 Ch. D., 251), when the same principle was applied as to the support which one house obtains from a contiguous house. Here, again, if the house has been contiguous to the other for twenty years or more, the latter cannot be removed if the result of so doing is to let down the former. It is to be remembered that even when no right to support has been acquired, the adjacent owner must take reasonable care in dealing with his own land or the buildings upon it—as by propping up temporarily—not to let down his neighbour's house. The law, as well as common courtesy and consideration, demands this (*Hill v. Commissioners of Sewers, Lincoln*, 2 *Times Law Rep.*, 404).

Without going further into the general law of easements, one or two recent decisions on various points interesting to architects may be noted.

First, as to the period of twenty years which, under the Prescription Act, is the period of enjoyment necessary for the acquisition of rights to light, four recent decisions are worth remembering. The first is as to the period from which these twenty years are to commence to run in the case of a house in process of building. In *Collis v. Laughler* ([1894] 3 Ch., 659) it has been held that this period begins to run as soon as the openings for windows have been made and the house roofed, though at that time there are no sashes in the window openings and the house is unfloored. The second is as to the consent of the owner of the servient tenement, which will prevent pre-

scription from arising even in twenty years. This consent must be in writing, and accordingly, when the consent to open the windows over the adjacent land was merely verbal, even though the owner of the windows paid rent for the continuance of the privilege, at the end of twenty years an absolute right to ancient lights was acquired (*Bewley v. Atkinson*, 13 Ch. D., 290). But the consent need not be by separate deed or agreement. In *Haynes v. King* ([1893] 3 Ch., 439), in the deed granting the house, there was a covenant reserving to the grantor the right to obstruct the lights overlooking the land remaining in him. This reservation, it was held, prevented prescription, and after twenty years of uninterrupted enjoyment by the grantee of the lights it was held the grantor might obstruct them. This case decided the further interesting point that the opposite sides of a street may be contiguous or adjacent lands where the land of the street is vested in the adjacent owners *ad medium filum viae*. The last decisions as to the period of enjoyment one may cite are these: In *Flight v. Thomas* (8 Cl. & F., 251) it was held that as in order that an obstruction of a light should be an interruption under the Act so as to prevent prescription it must continue for at least a year, as soon as the right had been enjoyed for any period of over nineteen years interruption became impossible, and so the right could no longer be defeated. In the recent case of *Lord Battersea v. Commissioners of Sewers of the City of London* ([1895] 2 Ch., 708), it was held that though there could not be a successful interruption within the twenty years, yet the right to the light had not been acquired until the twenty years had elapsed, and accordingly the Court could not grant an injunction to prevent the obstruction of the light. It was pointed out that though an interruption within the twenty years was impossible, still it was possible that no steps would be taken after the twenty years to put an end to the obstruction until the interruption had continued a full year, in which case the right to the light would never become legal and indefeasible.

This decision is important from another point of view. Under Lord Cairns's Act (21 & 22 Vict., c. 27), the Court has power to give damages in lieu of an injunction for injuries due to obstruction of ancient lights. It is doubtful, however, whether the Court under this Act can give damages for injuries not actually suffered but only threatened (*Martin v. Price* [1893], 1 Ch., 276). Accordingly it is doubtful whether the Court can give damages instead of an injunction where the building which is to obstruct the lights is merely commencing. In such cases the Court, in the absence of special circumstances, will—practically must—restrain the erection of the contemplated buildings. But once the buildings are erected, the Court, as a rule, will only give damages for any injury done by the obstruction of light. It will only grant a mandatory

injunction to have the buildings pulled down where the damages resulting cannot be compensated in other ways, or where the Court has been disregarded or imposed upon by the builder. Applying this, the practical effect of *Lord Battersea v. Commissioners of Sewers* (vide supra) is that when there has been over nineteen and less than twenty years of uninterrupted enjoyment of light, the owner of the land over which the light comes is not deprived of the right of building so as to obstruct it at any time before the full twenty years have elapsed, but may so build at the risk of having to pay for any damage thereby done to the adjacent owner through the obstruction of his lights.

This review has run to an unconscionable length, otherwise various other interesting points might be noticed. In conclusion, let me express the hope that the new edition of Mr. Goddard's *Law of Easements* will be as successful as its predecessors, as it probably will be and certainly should be.

J. ANDREW STRAHAN, LL.B.,  
*Barrister-at-Law.*

(126)

#### AN ARCHÆOLOGICAL DOMESDAY-BOOK.

*Government of Bengal. Public Works Department. List of Ancient Monuments in Bengal. Revised and Corrected up to 31st August 1895. Published by authority. Fcp. folio. Calcutta, 1896.*

This book, which has been presented by the Lieutenant-Governor of Bengal, is highly deserving of some notice, but being only "a list," or catalogue, it offers no particular point for architectural criticism. Its importance may be understood by giving a few details of its bulk and the method in which it has been got up. The book is foolscap size, and contains nearly 600 pages. From beginning to end it is a tabulated list, every two pages having nine columns; these columns are headed "District," "Locality," "Name of Monument," "History or Tradition regarding the Monument," "Custody or present use," "Present state of Preservation and Suggestions for Conservation," "Classification," "Remarks." Of course some of these columns present large blanks; but whatever knowledge has been collected about a monument, up to last year, is here recorded. Under the heading of "History or Tradition regarding the Monument" a slight description of it, if such exists, is given. Maps of each of the districts are added, which assist in showing the positions of the localities. It may be explained that the word "Bengal" in the title does not correspond with the "Bengal Presidency"—that extends over all the space from Calcutta to Peshawur. The *List* is limited to little more than the region known originally as Bengal, which extends from the Bay of Bengal to Patna on the Ganges, and from Chittagong on the east, and to some distance west of Calcutta, including Orissa and Chota Nagpur.



Orissa, of course, includes Puri, better known as "Juggernaut," with its great temple; and the important group of temples at Bhuvanesvar. For the space covered, this work is a grand architectural, or archæological "Domesday-book"; and in the future it will become invaluable for reference. Possibly there may be a good many mistakes in such a compilation; or, to put it in another form, we may assume that it would be next to impossible that such a vast collection of information could be put together without errors of some kind. Every care has been taken to insure accuracy; in the short preface it is explained that this is practically the third edition of the book. The first list was published in 1879; but more information was collected, and that was embodied in a revised list, which appeared in 1887: this was the work of the late Mr. W. B. Bestie, assisted by Mr. J. D. Beglar, who has had great experience in the Archæological Department. The present revised edition was put into the hands of Babu P. C. Mukherji, and Surgeon-Lieutenant-Colonel G. A. Ranking, M.D., lent considerable assistance in some departments of the work. The preface contains a request that notices of other monuments will be most welcome from any one, or corrections of errors that may be in the present publication.

The conservation of ancient monuments in India is a most difficult question. One has to travel a little in that country to realise what the problem means. It is the vast quantity of remains that has to be dealt with that causes the embarrassment. Every monument cannot possibly be preserved; and it is the selection of what is worthy of such care that is one of the difficulties. Luckily, local museums have been started in many places, and important pieces of sculpture, or inscriptions, are now preserved in them. If proper influence were brought to bear on rajahs and local men of position, they might be made to take an interest in the works of their ancestors, and be thus induced to bestow some care upon them. An effort in this direction might be tried. The title of the book under notice may be pointed to as a triumph of this kind: the book is published under the authority of "The 'Public Works Department,'" which has now the custody and care of the ancient monuments of India. In the early part of the century that Department was a perfect Siva of destruction among old structures and ruins of every kind. If a bridge had to be built, the first thing the engineer officer did was to inquire if there was any old temple near; if a road had to be made, a Buddhist lât was just the thing to cut up and make road-rollers with! Now all this is changed, and it would be difficult to find an engineer officer in India that has not some knowledge of archæology. Such avâtars in the Engineer Corps as Sir Alexander Cunningham and Sir Henry Yule no doubt did much to produce a change. When I first made Yule's acquaintance—it was in 1860—

he was then at the head of the Public Works Department, and his knowledge and devotion to archæology must have had a good effect on those connected with it. In the present day it is the railway contractor that is feared as the demon of destruction. In a previous notice which appeared in these pages I suggested that the only cure for the contractor was to make him into an archæologist: this process converted the Public Works Department from a sinner into a saint, and it might at least be tried upon the railway contractor.

Among notes giving what is known of the history and traditions of the monuments, there are many details of great interest. I shall only refer to one, as it has a bearing on the tomb origin of the Saiva Temple, a subject dealt with in a Paper of mine read before the Institute some years ago.\* The Temple of Kâli, or Durga, the wife of Siva, at Kâlighât, near Calcutta, is a very noted shrine, to which pilgrims come from all parts: this brings rupees, and the *List* states that the "Haldars"—the name of the proprietors of the temple—are a little over a hundred, and these, we may suppose, all make a living out of it. I am not likely to forget the visit I made to this temple as far back as 1859. *Kâli* is a word that means "time," and is described as a "black abyss" that swallows up all things. As the goddess personifies this very pessimistic aspect of nature, she is black in colour, represented with her tongue hanging out for blood, which is the principal offering. Kids are slaughtered before her, and the heads of the animals, with the warm gore dropping from them, are presented by the worshippers. The sight was sickening. It is said that in former times human sacrifices were offered at this place. Here is the traditional origin of the temple as given in the *List* at p. 52. *Kâli* is also known as *Sati*, and it was from her that *Sati*, or "Suttee"—the burning of widows in India—originated. "*Siva*, one of the Hindu Trinity, was not invited to a feast arranged for by his father-in-law, "*Daksha*. *Sati*, *Siva*'s wife, however, persuaded her husband to allow her to visit her father on the occasion. But on arrival at her father's house, she was so mortified at hearing her father speak ill of her husband that she immediately died. "When *Siva* knew this he became mad with rage and grief, and at once going over to the house of "*Daksha*, he took up the corpse of his wife, and, "placing it on his shoulders, began making a tour round the world. He became so furious that all the other gods apprehended that unless he were "pacified the destruction of the world would be inevitable. But so long as the dead body of his "wife was on his shoulders, there was no possibility "of soothing his anger. *Vishnu*, therefore, took "his *chakra* in his hand and gradually cut the "corpse into fifty-two pieces; in this way the

\* "Origin and Mutation in Indian and Eastern Architecture," *TRANSACTIONS* 1890-91, Vol. VII. N.S., page 225.

"catastrophe was averted. The fifty-two places "where the different parts of the body fell became "sacred as places of pilgrimage. One of her "fingers is said to have fallen at the spot where "the idol has been placed." That is, the finger fell on what is now the temple at Kálighát. Other accounts say it was the toe that fell at Kálighát; and according to Dowson, there were fifty-one shrines, called *Pitha-sthánas*, erected. These temples contain a figure of the goddess, but there is also a linga in each of them, so practically they are Saiva temples. We have in this story fifty-one of these shrines, which owe their origin not to the burial of a body; their claim to sanctity is based on the virtue of relics—they are of course only traditional, but traditional claims of this kind are far from being uncommon. In the Paper referred to above I have given a number of instances where Saiva temples are constructed, and some of them in the present day, as tombs.

WM. SIMPSON.

## NOTES, QUERIES, AND REPLIES.

### National Monuments: Proposed Legislation.

From Monsieur A. BARTHÉLEMY—

At the last general meeting of the National Trust for places of historic interest or natural beauty, the Right Hon. J. Shaw-Lefevre referred in his able speech to the Ancient Monuments Protection Act, which became, in 1882, part of the Statute Book. That Act empowers the owner of any ancient monument to which it applies to constitute the Commissioners of Works, by deed under his hand, the guardians of such monument.

"Where the Commissioners of Works have been constituted guardians of a monument, they shall thenceforth, until they shall receive notice in writing to the contrary from any succeeding owner not bound by such deed as aforesaid, maintain such monument, and shall, for the purpose of such maintenance, at all reasonable times by themselves and their workmen have access to such monument for the purpose of inspecting it, and of bringing such materials and doing such acts and things as may be required for the maintenance thereof.

"The owner of an ancient monument of which the Commissioners of Works are guardians shall, save as in this Act expressly provided, have the same estate, right, title, and interest in and to such monuments, in all respects as if the Commissioners had not been constituted guardians thereof.

"The expressions 'maintain' and 'maintenance' include the fencing, repairing, cleansing, covering in, or doing any other act or thing which may be required for the purpose of repairing any monument or protecting the same from decay or injury. The cost of maintenance shall, subject to the approval of Her Majesty's Treas-

ury, be defrayed from moneys to be provided "by Parliament."

Mr. Shaw-Lefevre suggested that the Act of 1882 might in some way be made applicable to all monuments presenting historic or artistic interest as well as to places of natural beauty, and in view of section 10 of the Act it seems that Mr. Shaw-Lefevre's suggestion could easily be carried out. Section 10 runs thus:—

"Her Majesty may, from time to time, by Order "in Council, declare that any monument of a like "character to the monuments described in the "schedule hereto shall be deemed to be an ancient "monument to which this Act applies, and there- "upon this Act shall apply to such monument in "the same manner in all respects as if it had been "described in the schedule hereto."

But it seems to me that what is required is not so much an Act allowing owners of monuments to place these under the guardianship of the Commissioners of Works, as an Act for the protection of monuments against owners who do not feel towards them the respect which our enlightened age does most decidedly command. And it is a source of some surprise that so much should have been done for prehistoric monuments, and that the National Trust should have to beg for the necessary funds to acquire and keep in proper condition spots of natural beauty like Barras Head, and places of historic interest like the pre-Reformation clergy house at Alfriston. It need not tax one's memory to remember what took place but a few months ago with regard to the Trinity Almshouses and to St. Mary Woolnoth.

What is wanted is a Bill on somewhat similar lines as the Bill passed in 1887 by the French Houses of Parliament. Italy, Greece, Spain, Turkey, Sweden, Denmark, Norway have all enacted proper legislation to that effect. What is also required, and I fancy that it might easily be performed by such a body as the Royal Institute of British Architects, is an inventory of the monuments which from the historic or artistic point of view most strongly appeal to our sympathies and our respect. Such an inventory was made in France by the Committee on Historical Monuments, as far as buildings are concerned, and a work of the same kind is now in progress with regard to the movable objects of art. That inventory would be of the greatest value to all artists and amateurs. It would constitute the indispensable basis to any Bill which might eventually be introduced in Parliament, and, by showing this country the full extent of her artistic and historic treasures, would help to foster that feeling of respect for the monuments of the past which would undoubtedly do more than any Parliamentary interference for the protection of ancient monuments.

Sir John Soane's House and the Building Act.

From JOHN HEBB [F.]—

Sir John Soane's house in Lincoln's Inn Fields, now the Soane Museum, projects three feet



six inches in advance of the houses adjoining on each side. This projection was added to the house in 1812, but the original building was erected in 1792. Sir John (then Mr.) Soane was summoned before the magistrates at Bow Street by Mr. William Kinnard, District Surveyor for St. Giles-in-the-Fields and St. George's Bloomsbury (who preceded Mr. George Pownall in that post) for having infringed section 49 of the Building Act, 14th George III., cap. 78, which prohibited any "bay window or other projection . . . being "built with, or added to, any building, so as to "extend beyond the general line of the front of the "houses in any public street, square, or way . . . "except such projections as may be necessary for "copings, cornices, fascias, door or window "dressings, or for open porticos, steps, or iron "palisades." The District Surveyor contended that the projection was contrary to the Act, and that it did not come within the exception with regard to shop fronts, &c., which was admitted by the other side. Counsel for the defendant called attention to the portico in front of the Royal College of Surgeons, which had not been complained of. The District Surveyor endeavoured to explain that this, being an open portico, came within the exception, but failed to convince the magistrates, who dismissed the summons, and gave it as their opinion that the proprietors of houses might lawfully build as far as the iron railings in front of their respective areas.

The District Surveyor, on 18th November 1812, applied to the Court of King's Bench for a mandamus to have the order of the justices removed into that Court for the purpose of being revised, the only defence made by Mr. Soane before the justices having been that the whole area in front of his house was his freehold property, and that he had a right to project what he pleased, provided he did not encroach upon the street, and on this defence the justices dismissed the summons.

Mr. Jekyll, who was counsel for the District Surveyor, was making some observations with regard to the Building Act, when Lord Ellenborough, interrupting, desired him to restrain his eulogy of that Act, since, however much it might have benefited the construction of houses, it was not in itself a model of construction. Mr. Jekyll replied that he was old enough to remember the late Mr. Sergeant Whitacre, who was an amateur of fires, and had a natural taste for conflagrations of all sorts, to witness which he would often rise from his bed. He used to complain that since the thickness of party-walls had been increased by reason of the Building Act he had not seen a single good fire, the conflagration always ending in the house in which it began.

Lord Ellenborough, being apparently in a merry mood, held that the District Surveyor was not aggrieved by the order, except to the extent of

feeling aggrieved by the law being wrongly expounded by the magistrates in the Court below, and that was not such a grievance as entitled him to the aid of the Court, and refused the motion, intimating that the proper course would be for the District Surveyor to lodge another information. This course the District Surveyor adopted, and on 23rd November again summoned Mr. Soane, this time to Marlborough Street Police Court. Counsel for the defendant took the preliminary objection that the case had been already decided, and the two magistrates differing in opinion no order was made, and the case appears to have been allowed to drop.

It appears from an engraving of the front of Sir John Soane's house, in the *European Magazine* (vol. lxii. 381), that the projection was originally an open loggia with an iron balustrade between the arcade on the first floor. The projection must have been less objectionable in its original condition than at present, and an enthusiastic apologist of Soane in the same magazine (apparently John Britton) describes it first as a verandah and then as an open portico. The loggia has been since enclosed.

## MINUTES.

### SPECIAL GENERAL MEETING.

ELECTION OF CANDIDATES FOR FELLOWSHIP; AN INTERIM REPORT OF THE COUNCIL *re* ELECTION OF FELLOWS.

At a Special General Meeting, held Monday, 27th July 1896, at 8 p.m., Professor Aitchison, A.R.A., *President*, in the Chair, with 27 Fellows (including 11 members of the Council) and 21 Associates (including 2 members of the Council), the Minutes of the Meeting held 6th July 1896 [p. 509] were taken as read and signed as correct.

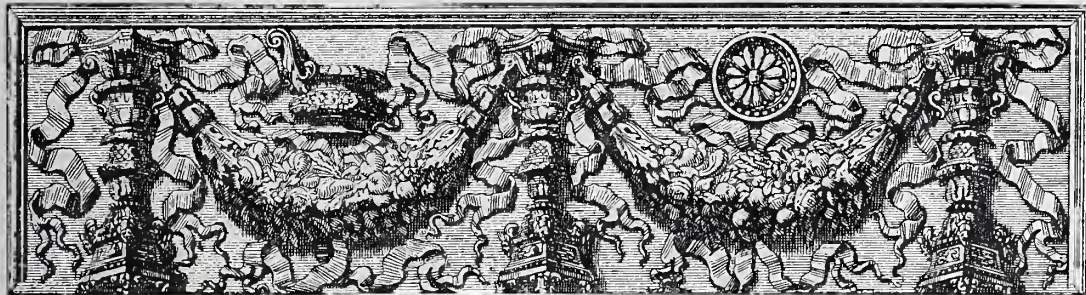
The following member attending for the first time since his election as Fellow was formally admitted and signed the Register—namely, Henry Philip Burke Downing.

The following candidates for membership were elected by show of hands, under By-law 9, namely:—

#### As Fellows (10).

CHARLES HENRY WORLEY.  
FRANK WALTER MEE (Manchester).  
HENRY ALLEN PROTHERO, M.A.Oxon. (Cheltenham).  
ARTHUR CHARLES ALFRED NORMAN [A.]  
(Sclangor, Straits Settlements).  
BERESFORD PITE [A.] (*Qualified as Associate* 1887).  
WILLIAM LOVELL MASON (Ambleside).  
FREDERICK GEORGE KNIGHT [A.].  
FRANCIS THOMAS VERITY [A.] (*Qualified as Associate* 1889).  
JOHN TAVENOR PERRY [A.].  
FREDERICK HENRY REED [A.].

The President having presented an interim Report of the Council on the question of the Election of Fellows, a copy of which had been issued on the 8th July to members resident within the United Kingdom, the same was discussed; and the proceedings having been brought to a close, the Meeting separated at 10.15 p.m.



## SIR JOHN MILLAIS.

**W**HEN Sir Francis Grant died, the choice of his successor lay by common consent between two men—one of whom possessed in a remarkable degree the qualities requisite for the position, while the other, for an immense majority of his fellow-countrymen, was the most popular, as he was the most brilliant exponent of his art.

On whom the suffrages of the Academicians lighted is now ancient history. Six months ago we architects felt specially called upon to record our grateful sense of the efforts of the painter-sculptor, on whom Sir Francis Grant's mantle then fell, to place our own art in line with her more generally popular sisters. To-day we join in lamenting the second of these two great men—who, after a six months' tenure of office, spent for the most part in courageous resistance to wearing and fatal disease, has, in his turn, received his order of release. With the death of Sir John Millais something more than the mere painter has been taken from us. The world is poorer by a great and generous heart; England, in particular, in losing him has lost the almost ideal representative of all that is best in her national characteristics, the happy conjunction of the truly sane mind with marked physical vigour; a man strenuous in the pursuit of pleasure as in the exercise of his craft, ardent sportsman and ardent workman, open-hearted and frankly outspoken, loyal and lasting friend. We were proud of Lord Leighton because he had the virtues between which and the ordinary Englishman an impassable gulf is fixed; we were proud of Sir John Millais because he was one of us, because he reflected all the more shining and more distinctive of those qualities which are our heritage, because the manly face and figure, the frank bearing and breezy manner, were the index of a character strong, simple, and honest.

The young Millais was not slow to show his strong bent towards painting; from the time when, in his sixth year, he was transferring the French artillery officers at Dinard to the pages of his sketch-book, both in school and out, the pencil was constantly in his hand; at eleven years of age he was a Student at the Royal Academy, and a prize-winner; at sixteen he exhibited in public. When once he had been hung, picture succeeded picture regularly. Meantime, if sales were not remunerative, money must be earned, and accordingly we find the young painter enrolled for the time under the banner of a certain legal luminary, who combined the practice of the law with a little judicious picture-dealing. Stratford Place was then the scene of a strange emporium where misfits were, so to speak, made shapable. Here the young Millais put backgrounds to second-rate Clipstone Street studies, worked up other men's rough sketches into a semblance of completeness, and, generally, infused a little backbone where a general limpness prevailed. For a man with a cynical turn of mind this occupation was not calculated to counteract the tendency; but, for him, it all came in his



day's work—only, when his worthy employer proposed to dock his assistant's salary for want of punctuality in the mornings, his passion burst out, and he hurled his well-loaded palette against the wall, where it stuck, and then dropped heavily to the floor. "I can tell you I was in a fright, as I cooled," he said long afterwards; "but, luckily, the old man was in a greater, and promised better pay for the future."

But this sort of thing could not last long, and by the time he was twenty the young enthusiast had abandoned this uncongenial and somewhat illegitimate branch of Fine Art, and had thrown down the gauntlet to a bitterly hostile public in his well-known "Isabella." The story of the pre-Raphaelite Brotherhood has been told and retold; the passionate wish to throw the conventional overboard, even to the crucifixion of art on the least significant minutiae of a subject, execrated at first, to be applauded later, has long ago done its work. Conventionalism can never actually die so long as mediocrity survives, but it has been scotched once for all, and to the credit of that little band of unflinching youths, for they were no more, the victory will always stand.

In force of character, in artistic insight, the young Millais stood head-and-shoulders above his associates. He saw, he must have seen from the first, that the photographic reproduction of detail was not an end in itself, only useful in so far as it was the most emphatic form of protest possible; and the pre-Raphaelite method was for him merely a stepping-stone to a truer, because less slavish, rendering of the world around him. From the first he was blessed with that spirit of independence which belongs to the strong man—the belief in self, which weaker mortals criticise while they envy it. He ranged himself definitely under none of the great commanders—"as well say that the rose is the only flower, as that Velasquez is the only painter"—and indeed he was almost incredibly slow to make the acquaintance in Continental galleries of those masters who are unrepresented here. It must have been almost fifteen years after the date of the "Isabella," when he was in the fulness of his powers, that a friend found him just starting for Italy for the first time. "For the first time!" he exclaimed. "By Jove, the cocks of the walk over there will stagger you a little!" "He'll not forget he's a little bantam himself," said the incorrigible man, with a humorous wink.

To say that Sir John Millais was a strongly imaginative man would not be strictly true. His was not so much an originitive mind as one endued with an infinite sensitiveness to suggestion. He could not strike the rock and make the waters gush forth; but with his divining-rod he could discover well-springs in the dry ground where others would have passed by. Take almost any one of his pictures, and we shall find this to hold true. The "Boyhood of Raleigh," for example, was called into existence by the habit of rapt attention in his son George, since dead, and round that charming face the whole congruous structure was built up.

He saw possibilities—in the face of Trelawney, in that of the well-known model who posed for the "Huguenot" picture, in the two flaxen-haired boys of "The Princes in the Tower"—possibilities to which a hundred others had been blind, and made them the foundation of a series of great and poetical works. "Sir Isumbras at the Ford" we really owe to the bridge; "Ophelia" to the flowers and grasses floating in the water. Almost without exception, indeed, one may say that the imaginative faculties followed and were nourished by the powers of observation, they did not command them.

All through life Sir John Millais was happy in being possessed by his subjects; he lived in them. To lay bare their hearts, to distil their essence, this was his aim as it was his safeguard. "Here are your autumn leaves," said a friend, as they passed a heap of burning leaves soon after the well-known picture was painted. "Ah! I ought never to have tried them—I couldn't give the smell," was his characteristic answer, and it is curiously

paralleled by Wordsworth's comment on a sketch of Rydal Waterfall, as he looked over a painter's shoulder, "Yes, it's an ungrateful subject. You can give neither the sound nor the "motion."

It would probably be impossible to lay the finger on any other painter whose art has passed so resolutely on from phase to phase. From the "Christ in the House of His Parents," and the strictly pre-Raphaelite group, to the epoch of the "Huguenot" and the "Order of Release"; on again to the exquisite "Vale of Rest," "Autumn Leaves," and "The Eve of St. Agnes"; reverting at moments to his earlier self, as when he painted "Sir Isumbras at the Ford," or, later, in the case of the "Black Brunswicker," with its little eddies and backwaters, the main stream swept rapidly on. The evolution was gradual throughout; occasionally the world might be startled, as it was when the series of great landscapes was inaugurated with "Chill October," but each phase was instinctive and grew naturally out of its predecessor. Nor was the growth more remarkable than the variety of its manifestations. It is absurd to regard him as a "genre" painter, as a foreign critic has chosen to do. Say that he was landscape, portrait painter, and genre, and you will not actually cover much of the work which charms us most—each merges into the other. No man, indeed, was ever so difficult to label, or held so commanding a position in each of the many groups to which he belonged.

It has been said that his art was a bourgeois art, that it was of the kind which appeals to the million rather than to the cultured few. That the sentiment is somewhat trite and obvious, as in the "Huguenot," for instance, and others of that class; but Millais was not the popular painter as Dickens was the popular novelist. His pathos was unforced and true. He ennobled the common things of life, not perhaps, in the hyperbolic phrase of the poet, "till they rose to touch the spheres," but he gave a time-honoured situation a new dignity by a distinction of treatment which never failed, and a charm of presentment which is not to be dismissed because it gave general pleasure. If the superior person exists for whom the exquisitely tender face and pose of the woman in the "Huguenot," the pathetic tremulousness of the lips, the mute appeal of the eyes, are as nothing, because they express an emotion with which the mere Philistine is familiar, then that person is a fitting object for compassion.

It is these men of force and energy who always seem the spoiled darlings of Fortune. They woo her too imperiously for refusal. There was a time when "Johnny Millais' luck" was a by-word among painters, and they had something to show for it. A week before the sending-in day, for instance, the "Eve of St. Agnes," which most of us know and love so well, was simply without background; the figure had been worked upon for week after week, but behind it were nothing but a few leading lines for the bedstead and accessories. All the background had to be painted at Knole, in a State room there, of which the painter had only the dimmest recollection, and the date of his visit was determined by the necessity for having a full moon. Three or four days later he was back in town, with the picture in precisely its existing state, the moon having been unclouded and of exceptional brilliancy every night. Even Diana was kind to this favoured mortal. But, generally speaking, the good fortune which followed the painter was that which the hard-worker is wont to reap. In the days when he was working on his Tennyson illustrations he was wont to leave his guests at their dessert, and slip away to take his place under the lamp of his drawing-table, which stood near, to work on into the night. This was the answer to the riddle, the simplest and most obvious of all.

To speak of the great painter's pictures by name, to recall what are household words to all, to express preferences where every one has his own, would be the merest work of supererogation. His work as an illustrator, less known, perhaps, to the younger generation, was on an



equally high plane ; simple in its masterly concealment of art, full to the brim of excellent characterisation, and presenting us with a gallery of men and women among whom one would have been well content to live. With the exception of Fred Walker's work in the same field, his illustrations stand by themselves, and the younger man's work, perhaps, never attained quite the same level. For real power of design, doubtless the best things Sir John Millais ever did were the illustrations to the Parables, and, till proof is brought to the contrary, one may plausibly believe that they are absolutely the finest pieces of illustration extant. But, if we know the painter and draughtsman for the consummate master that he was, it is probably only his fellow-painters who know how true a critical judgment formed the complement to his executive power. To follow him round the walls of an exhibition was an education in itself. The shell was cracked, the kernel laid bare, with a word, or an emphasis, which said more than pages ; unstudied in his speech as he was, he was a master of expression, and, when deeply moved, could rise to a height of natural oratory not often reached.

We have already said, in the case of Lord Leighton, that the distinguished position of the man was one of many factors in raising Art to some semblance of the position which she occupied in the great days of the Renaissance ; and the same may be said in identical terms of the subject of the present notice. Like another Titian he welcomed Royalty to his house as guests, because his genius had made his art a passport to the highest places, and had taught our rulers to recognise the position it had taken.

If success had spoiled his art, we should have grudged it ; if it had made the man a whit less genuine, less modest, as, with all his sense of power, he was, we should have grudged it still more ; but what he was at first he was to the end. He seemed to pass through the world unscathed ; the smell of fire had not passed over him ; open, unsophisticated, almost boyish in his frankness, he has passed away mourned alike by the young, whom he was ever ready to befriend, and by those of his own age, who can look back down the unbroken years of good comradeship.

ARTHUR EDMUND STREET.

## THE TEMPLE AT DEIR-EL-BAHARI.

By EDOUARD NAVILLE [*Hon. Corr. M.*], Ph.D., D.Litt.,

*Correspondant of the Institut de France.*

THE Temple at Deir-el-Bahari is now completely cleared ; we are able to study it in all its parts, and to recognise how very different it is from all other temples of Egypt. I should like to direct the attention of architects to a few points which seem to me worthy of interest, wishing at the same time to emphasise how urgent it is that the necessary work should be done for saving this beautiful and unique monument from decay and inevitable ruin.

I need not go into many details as to its general plan, which has often been described. It will be sufficient to say that it is built in three successive steps or platforms, the lowest being on a level with the natural ground, while the two next have supporting walls generally built against solid rock. In the axis of the temple, a causeway formed by two inclined planes leads to the upper platform, where the sanctuary is cut in the rock. On this upper platform, the centre of which is occupied by a great open court, all the chambers and chapels opened where the priests carried on the worship of the gods, and of the deceased to whom the temple was dedicated.

A first fact to be noticed is that these steps, or platforms, are artificial. They are not produced by the natural slope of the soil. Therefore, although the Temple of Deir-el-Bahari does not strike one by its colossal proportions, the preliminary work, the preparations

for building the edifice, must have entailed a very great amount of labour. Let us consider, for instance, the northern half of the middle platform, between the causeway and the mountain. When I regained the inclined plane which leads from that platform to the upper one, I noticed that the nucleus of the plane was solid rock, cased in two walls which run along it. Thus all the northern half of the platform, the area of which is very extensive, must have been cut in the mountain, and a great part also of the southern half. But then, as the mountain had a steep fall, and as the builders wanted a width equal to that on the other side, they had to raise a high supporting wall and fill up the space behind it, so that the floor should be on a level with the other side. Evidently the direction of the mountain was not at right angles with the axis of the temple. They had to cut deep on one side, and to fill up on the other, so as to get the flat area they required. On the lowest platform they had only to cut out the rock; but there they did not quite finish, since the floor of the northern half is about two feet too high. The greatest work of this kind is the erection of the upper platform, which is entirely converged in the mountain, so much so that the builders had to cut down the lower part of the cliff, and to straighten it in order to have it vertical, and to build their temple against it.

An interesting question which has not yet been solved, is the use of these different platforms. What were they made for? For what purpose were they built? If we compare Deir-el-Bahari with the usual temples, both of the Pharaonic and Ptolemaic epochs, I believe we must assimilate these platforms to the large columned halls called by Strabo *ptera* and *pronaos*, preceding the sanctuary, and around which processions of priests carried the sacred emblems in the great festivals. Especially if we consider the great temples on the western side of Thebes, the so-called Memnonic, which are huge funerary chapels connected with the tombs of the kings, we find a striking point of analogy. At the Ramesseum and at Medinet Haboo the walls of the large courts are covered with historical inscriptions recounting the great deeds and munificent gifts of the sovereign. This character of being a record of the sovereign's reign, and of the glory which he earned, seems to have been the chief purpose of Hatshepsa in building her temple. She wished it to be a monument to herself, and perhaps to some members of her family, like her father Thothmes I., who probably was buried in the neighbourhood. The worship of the gods could not have had the same importance there as in other temples; it seems to have been concentrated on the upper platform with its chambers and altars.

On the middle platform, which would correspond to the *pronaos* of Strabo, there are two lateral shrines dedicated to Hathor, the goddess of the mountain in which the tombs were cut, and to Anubis, also a funerary god; but the whole length of the walls is covered with sculpture describing the miraculous birth of the queen, her coronation, her naval expedition to Punt, &c. The ceremonies which were performed on this platform, the processions, if there were any, must have referred to the funerary worship of the queen. It is doubtful whether the hatred which Hatshepsa's successor felt towards her ever allowed any ceremonies to take place in her honour. Nevertheless, the temple was built for that purpose, and one can imagine that on certain anniversaries of the queen's life the priests performed the ceremony of taking from their sanctuaries the emblems of Hathor and Anubis, both divinities of the lower world, and carrying them above, to the upper court, where stood the vaulted chapel dedicated to the *Ka*, or double of the queen. In the lower platform, which would correspond to the *ptera* of Strabo, the floor was used as the garden or orchard of the temple. I found there numerous pits sunk in the rock where trees had been planted and artificially watered. On the wall which bounds it on the west were also found records of the queen's great deeds, the transportation of two obelisks from Aswân to Thebes, an historical inscription, among many others, relating to an expedition against the negroes.

That these numerous sculptures found in the temple were very much valued, and considered as works of art to be taken care of, is proved by the fact that, with the exception of a



few on the upper platform, they are everywhere under cover ; there are none in the open-air, as we find later, for instance, on the outer walls at Medinet Haboo. They are always either in closed chambers, or sheltered by a portico built on purpose, and made of two rows of columns or pillars. These sculptures certainly deserved the special care bestowed upon them. Wherever they have not been ruthlessly destroyed, either by later kings who did not recognise the legitimacy of Hatshepsa, or by the Coptic monks who settled in the ruins of the temple, they strike us by the delicacy of the workmanship, the life in the action which they represent, and also by the brilliant colours which have been preserved here and there. They rank



THE TEMPLE OF DEIR-EL-BAHARI (MIDDLE PLATFORM).

among the best specimens of Egyptian art, and may be compared to the work of the Twelfth Dynasty, which Hatshepsa took as model, or, after her, to what Seti I. had at Abydos. The head of Aahmes, the mother of Hatshepsa, to be seen on the middle platform, may be taken as a type of refined beauty such as the Egyptians conceived and reproduced within the limits of their conventional rules which they never could break through. The modelling of the features with a very low relief is admirable. Elsewhere the expedition to Punt, the nautical scenes, the military processions and war-dances, are full of life and motion ; and they are remarkable also for the accuracy of details, to which Egyptian artists paid great attention—for instance, in representing the rigging of a ship, or ethnological types.

These fine sculptures—pictorial biography, as they might be called—depicting the life of the queen from birth to maturity, when she is represented sitting on her throne, always in man's attire, were engraved on the supporting walls of the platforms. As they were the main purpose of the construction of the temple, special means were provided for their protection. Along each of the supporting walls there is a raised platform to which access is given

by four steps; on this platform are two rows of columns supporting a ceiling, a few slabs of which have been preserved here and there. It is a regular portico, which, in my opinion, had no other purpose than to shield the sculptures from the rays of the sun, and to allow them to be looked at in the shade. For these porticos do not lead anywhere; there are no openings of any kind in the supporting walls; they seem to have been mere walks, and generally, after going to the end, the visitor was obliged to retrace his steps to the stairs near the causeway by which he had come up. A Greek might well have called these porticos "Poecile," from the bright colours which he would see on the walls. Now, unfortunately,



THE TEMPLE OF DEIR-EL-BAHARI (MIDDLE PLATFORM). SHRINE OF ANUBIS.

some of the most interesting sculptures have been erased; but enough is left to show the original magnificence of the place. The ceilings have fallen in, or they have been intentionally thrown down by the Copts; what remains of coloured work is exposed to the rays of a torrid sun, the heat of which in the summer months even the natives declare to be unbearable. It is most desirable that in some way the porticos should be restored, or the colours will fade away. Owing to the very good quality of Egyptian mineral colours, the effect of the sun will not be felt immediately, it will be a question of years; but sooner or later the painting is certain to disappear.

There is no doubt that among all Egyptian buildings Deir-el-Bahari reminds one most strongly of a Greek temple. Coming from the Ramesseum, where the visitor catches sight for the first time of the shrine of Anubis, with its three rows of proto-Doric columns, and of the long colonnade which, starting from the shrine, follows the mountain on the north side of the middle platform, he believes himself before a Greek structure, and the effect is enhanced by the white colour of the limestone, which creates the illusion of



white marble. This fact has its significance, considering that the period when Deir-el-Bahari was built is considered by many scholars as the dawn of the Mycenæan age. The existence of this temple is an important argument in the discussion now being waged as to the possible influence of the East, especially Egypt and Assyria, over Greek art. I should say that what leads one, at the sight of Deir-el-Bahari, to think of a Greek temple, what accounts for its undeniable similarity, is more the general appearance of the building than the minutiae of style. In spite of their being called proto-Doric, the resemblance of the Egyptian columns to regular Doric columns is rather remote. The fluting is only slightly marked; the square abacus, of the same width as the column, instead of the Doric capital with its echinus, gives to the Egyptian columns a stiff and rigid appearance. We miss the grace which the Greek mind knew how to give to the columns of the Parthenon, without impairing their strength and their majesty. I believe it is in the proportions that the similarity to a Greek building is to be found—in the spacing of the columns, in the relation of the column to what it has to support, as well as in the conception of the construction as a whole.

It is curious to notice this Greek character at a period which I consider as a turning-point in Egyptian architecture. Undoubtedly the Eighteenth Dynasty, to which Hatshepsa belonged, followed in the steps of the Twelfth, the mightiest and the most glorious, before the invasion of the Hyksos made a break in the political and artistic development of Egypt. The Twelfth Dynasty had already adopted the proto-Doric style of architecture—the lighter type, which is not colossal, and which gives one the impression of elegance rather than majesty. Hatshepsa built in that style, and so did her successor Thothmes III.; but the succeeding kings turned aside from the line which might have led them to real elegance and grace, and embarked in another direction. Either a religious idea, or a false ambition—the desire that their constructions might reach the sky, as they often say in their inscriptions—induced them to discard the elegant style and to strive after the colossal. Soon after Thothmes III. we find Amenophis III. building the Temple of Luxor, with its enormous columns and architraves. Rameses II. seems to have directed all his efforts towards leaving gigantic monuments of his reign, such as the hypostyle hall at Karnak, or the four sitting statues at Abou Simbel, or the Colossus at Tâu. And while in much of the work of Rameses II. there is still a marked beauty allied to imposing majesty, such as at the Ramesseum, for instance, the massive and clumsy proportions of the columns which Rameses III. erected at Medinet Haboo show all the signs of artistic as well as political degeneracy. Nothing but hugeness seems to have been the aim of the architect. Even the Ptolemies, in spite of their Greek origin, could not dissociate themselves from a tradition which was a thousand years old, and they erected buildings which strike the spectator more by their size than by their beauty.

The value and interest of Deir-el-Bahari are due to these two facts: that, besides being different from all the other temples, it is the largest and best specimen of what I call the elegant style of Egyptian architecture. Therefore it is doubly important, now that it is completely cleared and free from rubbish in every part, to protect it against the various dangers which threaten its destruction. Walls have to be built in order to keep back the gravel falling from the mountain, which might fill up again parts of the upper court. The roofing of some of the chambers will have to be restored, as frequently bits of stone drop from the overhanging cliffs and damage the sculptures. Pillars will have to be straightened, and drums of columns replaced. Walls which the slightest shock of earthquake would cause to collapse have to be taken to pieces and rebuilt. Coptic masonry has to be pulled down in order to take out the precious fragments built into it. In fine, the valuable sculptures of the porticos must be sheltered from the mischievous effects of the sun. Having now, after four winters' work, finished the excavation of this beautiful monument, I appeal on its behalf to all the friends of Egyptian art, and especially to the Society for the Preservation

of Egyptian Monuments,\* and I earnestly beg them to provide means for ensuring the safety of the Temple of Deir-el-Bahari. Mr. Somers Clarke, on whose thorough knowledge of Egyptian architecture I need not insist, and who liberally offered to superintend the work of reconstruction, has made a plan which seems to me eminently practical and appropriate. Especially his idea of raising the pillars of the portico to their proper height, and making a ceiling with railway-sleepers and cement, is a very happy one. Besides protecting the sculptures, it would restore to the building something of its original appearance. His plan has another advantage: it is the cheapest that can be adopted, and a sum of between £200 and £300 will probably cover the expense. Under these circumstances I hope that Deir-el-Bahari will not be allowed to perish from disintegration and decay, and that future generations will not reproach us with having brought to light that beautiful monument merely to let it go to ruin.

EDOUARD NAVILLE.

Malaguy, near Geneva.

### A HUNDRED YEARS' RECORD OF GREAT MEN.

The Library has recently been enriched by the presentation of an authentic record of all the great men, with slight exceptions, to whom the world is indebted for the advancement of Literature, Science, and Art during the last hundred years. The publication of such a record is due to the fact that in October last year the Institut de France attained its first century of existence. Its component parts, however, had had a previous existence of no mean duration, and though historically the Institut de France may be said to owe its birth to the Republic, its true foundations were laid in the Great Age when France dominated the world by her example. To Cardinals Richelieu and Mazarin, and to Colbert, is due the creation of most of the material with which the Institut was constructed. The Académie Française from 1635, the Academy of Painting and Sculpture from 1648, the Academy of Architecture from 1671, the Academy of Inscriptions and the Academy of Sciences from a slightly earlier date, had done yeoman's work during the long period which elapsed from their foundation to their suppression in 1793. All this, however, is told in M. le Comte de Franqueville's remarkable work *Le Premier Siècle de l'Institut de France* [J. Rothschild: Paris, 1895], consisting of two handsome, very creditably printed quarto volumes of some 500 pages each. The first volume contains as frontispiece a presentment of the Palais de l'Institut after an engraving done by Israel Sylvestre in 1670; and the second a view of the Château de Chantilly, as recently restored by Monsieur Daumet [*Hon. Corr. M.*], an inheritance which, thanks to the munificence of the Duc d'Aumale, will accrue to the Institut. The history, organisation, and *personnel* of the Institut take up a considerable chapter in Vol. I., and then are given in chronological order all the names inscribed on its brilliant roll of *Académiciens titulaires* since the beginning, with a brief biographical notice and list of the principal works of each. Vol. II. contains a similarly complete roll of the *Membres libres*, the *Associés étrangers*, and the *Correspondants*, a description of the various prizes held in trust and awarded by the Institut, the *personnel* of the old Academies, and a mass of other information. Those, by the way, to whom French is not easy reading may learn something of what the Institut de France has done for Architecture from Papers published in the TRANSACTIONS of 1883-84, entitled "A Brief Review of the Education and Position of Architects in France since 'the year 1671,'" with "The French *Diplôme d'Architecte* and the German System of Architectural 'Education.'" Appended to these Papers are reproductions of drawings presented to the Royal Institute of British Architects by the elder Vaudoyer in 1838, among them being a plan of the Palais de l'Institut as it existed in 1817; and another representing the central building (the work of D'Orbay) as Vaudoyer proposed to alter it in 1810 for the purposes of the Institut. It must be said for the Comte de Franqueville's work that it is a marvel of completeness, and in every respect a fit souvenir of the centenary of the Institut. Its compilation must have been a truly arduous task, and the author deserves universal congratulation for the manner of its accomplishment.

\* See correspondence on the subject of the present condition of the temple from Mr. Poynter, R.A., and Mr. Somers Clarke in *The Times* of 28th August, and a reference to the same in the *Chronicle*, p. 552-53.





9, CONDUIT STREET, LONDON, W., 17th September 1896.

## CHRONICLE.

### International Competition for Theatre, Kieff.

Monsieur A. Barthélemy has been kind enough to prepare a full and interesting account of the international competition for a theatre at Kieff, and to combine with it particulars which cannot fail to be useful to British architects who may, in spite of the short time at their disposal, submit designs for the projected work. Monsieur Barthélemy writes as follows :—

The Russian town of Kieff has decided to build a theatre to replace the one which was destroyed by fire. It sends through the Imperial Society of Architects of St. Petersburg an appeal to the architects of all nations; and it is needless to say that the Royal Institute of British Architects is one of the Societies personally appealed to by the Russian body. I cannot do better than give a translation of the regulations for the competition, which, coupled with the excellent plan here reproduced, will provide our British architects with all the information they require :—

The Imperial Society of Architects of St. Petersburg have received a commission from the Municipal Council of the town of Kieff, to promote an international competition for a theatre to be erected in Kieff.

1. The theatre is to be erected on the site where the former building stood. The main frontage must extend along the Wladimirskaja Street, and may be brought nearer to it than formerly. The square may be done away with.

2. The auditorium should accommodate 1,500 persons.

A. Ample space must be provided in the orchestra stalls and pit, with a sufficient number of openings in order to insure a rapid exit for the public. Pit boxes may be erected, but they should not extend all round the auditorium.

B. The boxes, with the exception of boxes to be indicated by letters, must be made to accommodate five persons, in the pit (pit boxes), on the tier, and in front. The galleries must be placed at the back of these. Balconies and amphitheatres may be added.

C. Dressing-rooms, with separate lavatories for ladies and gentlemen, should be set apart on each storey.

D. The orchestra should accommodate seventy musicians, with a special lobby, and a room wherein to store the instruments. Separate exits.

3. The boxes should open on lobby-passages. The vestibules should be spacious. Two booking-offices. Cloak-rooms should not be placed in the lobbies. Give special attention to the necessary number and suitable arrangement of staircases. Exterior balconies are allowed.

4. Site for the buffet.

5. The dimensions of the stage should correspond to those of the auditorium, and allow of grand operas being performed, with necessary provision for the prompt shifting of scenery. It is essential that in case of fire the stage could be isolated from the auditorium and the artists' dressing-rooms.

6. Sixteen artists' dressing-rooms for ladies and gentlemen, with special entrances, as well as a lobby and smoking-room. Two dressing-rooms for the chorus, each providing accommodation for forty people. A dressing-room for 100 supers. Two dressing-rooms for the ballet, each accommodating ten people. A room for the leader of the orchestra. A room for the stage-manager. A room for the leader of the chorus. Three rooms for rehearsals.

7. The manager's room. A room for the impresario. A room for the inspector. A room for the telephone and the heating and lighting apparatus.

8. In a special part, or separate, should be provided :—

(a) Two wardrobes, with a minimum area of 20 square *sagènes*, i.e. 90 square metres.

(b) A store-room for the properties, with a minimum area of 10 square *sagènes*, i.e. 45 square metres.

(c) A workshop, with a minimum area of 50 square *sagènes*, i.e. 225 square metres.

(d) A library, with a minimum area of 9 square *sagènes*, i.e. 40 square metres.

(e) A store-room for scenery, providing space for at least thirty operas.

(f) A room for painting scenery.

(g) Lodgings for the inspector, composed of three rooms and a kitchen, with a total area of 16 square *sagènes*, i.e. 75 square metres.

(h) Two rooms for the caretakers, with a kitchen, with a total area of 12 square *sagènes*, i.e. 54 square metres.

9. Separate exits should be provided everywhere, as well as water-closets, and an effective system of water-supply against fire.

10. The drainage of the water-closets and sinks should be connected with the town system of sewers.

11. The heating system is supposed to be that of steam at low pressure with ventilation. Special electric light for the building, entirely separate from all connection with the street. Indicate the sites for boilers and machines.

12. Roofing, ceilings, floors (excepting the stage floor), partitions, and fittings for boxes to be fireproof.

13. The interior decoration to be unostentatious.

14. Frontages to be of bricks, with ornaments, but without stucco.

15. The cost of the building should not exceed R.450,000, i.e. about £48,000. In order to base calculations for the said cost the price of the cubic *sagène* (9.71 cubic metres) is fixed at R.55 (about £6). In the above amount of £48,000 the expenses relating to heating, ventilation, water-pipes, electric-lighting, and the machinery of the stage are not included.

16. The designs should include plans of each storey, as well as of the frontages, on the Wladimirsky, Foundouk-lévsky and Théâtrale streets, a longitudinal section, two transverse sections, and an estimate of the whole, with an explanatory notice. The scale to be a hundredth of a *sagène*. The designs should reach the Imperial Society of Architects (Quai de la Moika, 83) not later than the 3/15 December 1896, at 7 p.m.

Competitors not living in St. Petersburg may forward their designs by post as late as the above-mentioned date, in proof of which they are required to send the Post Office receipt giving the date when the designs were posted.

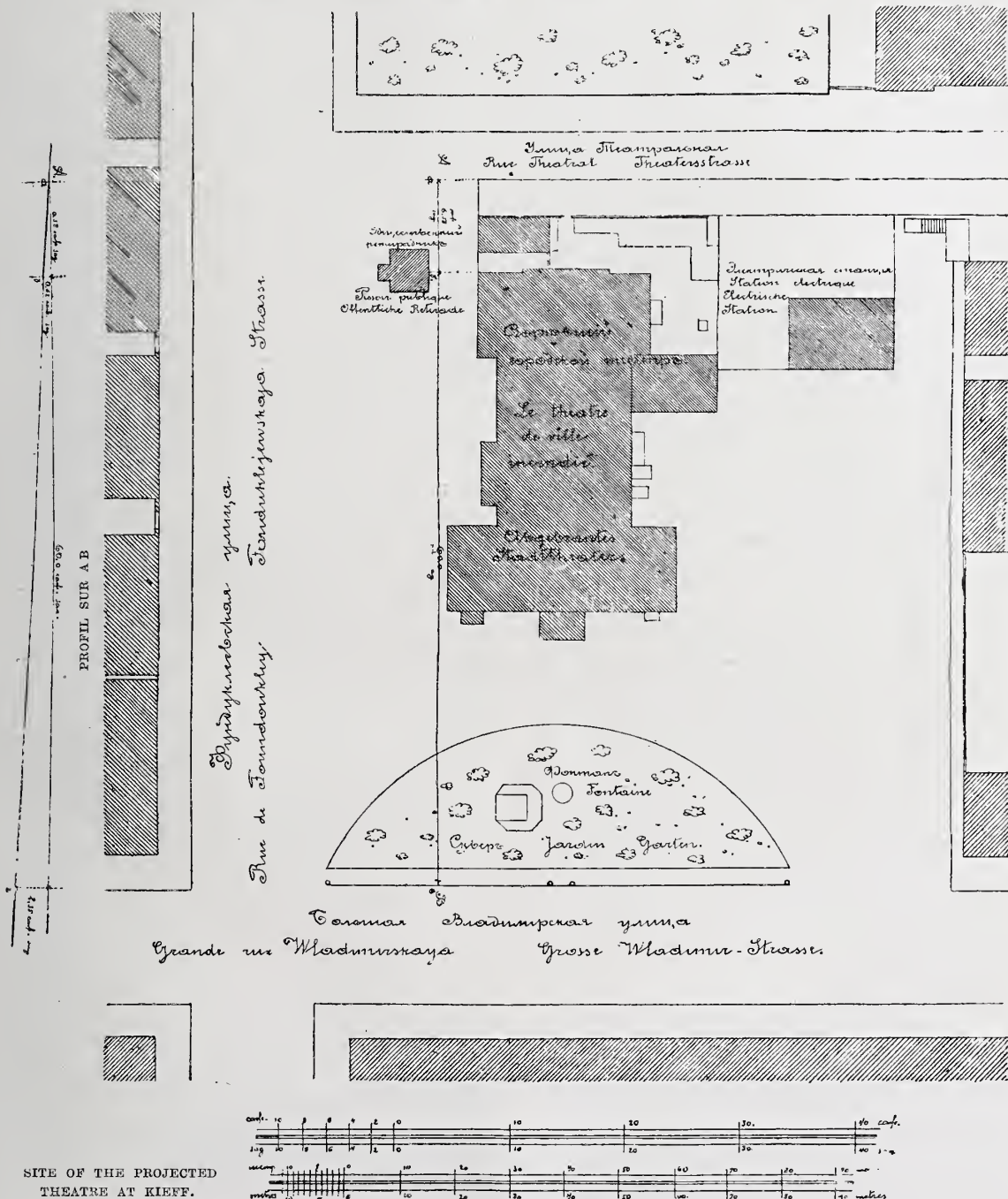
17. Premiums will be awarded to the amount of R. 2,500 (about £280) for the first; R. 1,500 (about £160) for the second; R. 1,000 (about £120) for the third; R. 700 (about £76) for the fourth; and R. 300 (about £32) for the fifth.

18. The designs selected for awards will become the property of the Municipal Council of Kieff.

The said Council reserve to themselves the right :—

(a) To choose from amongst the premiated designs

19. For any particulars not here specified intending competitors should refer to the Rules for the Conduct of Architectural Competitions issued by the Imperial Society of Architects of St. Petersburg on the 28th March 1895.



SITE OF THE PROJECTED  
THEATRE AT KIEFF.

awarded either any one, or any part of any one, which they may deem desirable.

(b) To employ to carry out the work either the author of the design or any other person, and to pay such person accordingly.

20. The jury will be composed of the following members: Professors N. L. Benois, R. A. Goedicke, and the Count P. J. Suzor, Architect-Academician, Honorary Members of the Imperial Society of Architects of St. Petersburg; Messrs. A. R. Goeschwendt, K. J. Maevsky, P. O. Salmon-



vitch, Architects, and K. G. Preiss, Architect-Academician. They will have as assessors three persons to represent the Municipal Council of Kieff, the said persons to be chosen by that Council.

There is a curious similarity between the Suggestions for the Conduct of Architectural Competitions which were sanctioned by the Royal Institute in 1892, and those issued by the Imperial Society of St. Petersburg. The differences are few. While the Institute suggests that the promoters of an intended competition should, as their first step, appoint one or more professional assessors, architects of established reputation, the Imperial Society provides for the appointment as assessors to the architects of persons such as sculptors, engineers, physicians, teachers, &c., the number of those members not to exceed a third of the total jury. Both Societies agree, of course, that every promoter of a competition and every assessor engaged upon it should abstain absolutely from competing and from acting as architect for the proposed work. But according to the Royal Institute, the duty of assessors should be, amongst others, the paramount one of drawing up the particulars and conditions as instructions to competitors, and of advising upon the question of cost; while the Imperial Society only admits of those instructions being sanctioned by the jury, after having previously been framed by the promoters.

Clause 4 of the Russian scheme suggests that the conditions of the competition should only bind the competitors to produce sketches with approximate estimates; and clause 6 invites the promoters of a competition to determine the number and kind of plans and drawings, their scale and finish. Both these clauses are very much in accordance with the Institute suggestions. But the Imperial Society adds another condition to these, viz., that the cubic unit should be specified in the programme of the competition, as well as the cost of that unit.

The Imperial Society has a clause which relates to the period during which the designs should reach the jury. It allows of the designs being forwarded by post in a manner which has been heretofore specified.

While the Institute is in favour of the designs being numbered by the promoters in order of receipt, the Imperial Society rules that each design shall bear a motto, the name and address of each competitor being indicated in a sealed envelope bearing on the outside the motto chosen for the design.

The Imperial Society's rules say nothing of the three ways in which, according to the Institute, competitions should be conducted. They suggest that besides the premiums, which should always be awarded to the best designs, there should be provided a certain sum of money to enable the promoters to purchase designs which, although interesting, did not secure a reward.

Clause 9 of the Institute Suggestions has no analogy in the Russian scheme; but while the Institute says that it is *desirable* that all designs submitted in a competition should be publicly exhibited, the Russian scheme makes of such an exhibition a condition *sine qua non*.

The awarded designs become, according to the Russian rules, the property of those who promoted the competition. Both Societies agree in the expression of their desire that the architect whose design may be selected as the best should be employed to carry out the work.

Although I am not personally in favour of competitions, I cannot but hope that our British architects will avail themselves of the opportunity offered by the town of Kieff. There cannot be anything more interesting to an architect than to conceive the plan of a theatre; and the appeal addressed by the Municipal Council of Kieff through such a channel as the Imperial Society of St. Petersburg should be fully responded to.

#### The Autumn Examinations (Architecture).

The dates for the Autumn Examinations have been fixed as follows:—The *Preliminary* Examination qualifying for registration as *Probationer R.I.B.A.* will be held on the 10th and 11th November. On these dates will also be held the written and graphic portions of the *Intermediate* Examination, qualifying for the grade of *Student R.I.B.A.*, the oral part being taken on the two following days. Applications for admission to either Examination, to be made on the official form, must be sent in on or before the 24th prox., and, in the case of Probationers entering for the Intermediate, must be accompanied by the required testimonies of study. The *Final* Examination, qualifying for candidature as *Associate R.I.B.A.*, will be held from the 20th to the 28th November, and applications and testimonies of study must be sent in on or before the 2nd November.

A *Special* Examination, qualifying for candidature as *Associate R.I.B.A.* (subject to section 8 of the Charter), for architects in practice not less than twenty-five years of age, and for chief assistants over thirty years of age, will take place on the same days as the Final above mentioned. An applicant for admission to the Special Examination, provided he were not in the active exercise of his profession prior to the 1st January 1885, is expected to submit Probationary work, which may consist of the working drawings of a building, executed or otherwise, of his own design, with a perspective view (not necessarily of that building), and a drawing of some ornament from the round. Applications, &c., must be sent in on or before the 2nd November.

#### The Temple of Deir-el-Bahari [p. 544].

A letter which appeared in *The Times* of the 28th ult., accompanied as it was by a report on the Temple of Deir-el-Bahari, may gain additional

readers now that more is known of the great temple than was possible at the time of their publication. Since then, Monsieur Edouard Naville, writing from Malaguy on the 11th inst., has furnished for this JOURNAL an account of special interest to architects of his four winters' work at the temple. That the remains require support and protection is made abundantly clear in his description, and it can only be hoped that Mr. Poynter's appeal for funds to effect so important an object, will meet with a fitting response.

#### The late Sir John Everett Millais [H.A.], P.R.A.

The death, on the 13th ult., of the President of the Royal Academy, Sir John Millais, has deprived the Institute of one of its most distinguished Hon. Associates. Though not among the earliest elected—for he did not join until 1879—his goodwill and sympathy with the aims of the architect were always manifested. A short record of him, written in Mr. Arthur Street's happiest vein—a companion tribute, so to speak, to the same writer's reflections upon Leighton—is given on a preceding page.

#### The late John George Finch-Noyes [F.].

The following obituary notice of Mr. Finch-Noyes, who was elected Associate in 1868 and Fellow in 1876, is a tribute to his memory by Mr. Macvicar Anderson [F.] :—

Not a few within the ranks of the profession, and a wide circle of friends beyond, will have heard of the death of John Noyes with keen regret and unfeigned sorrow. Some two years since, a sudden attack of a serious nature brought him face to face with the fact, hitherto unsuspected, that he was suffering from heart-disease, and he then became aware that, although he might live for years, he was yet liable to be cut off at any time. A second attack early last January led to the resolve to abandon active work, and in the hope of benefiting his health, he determined to spend a year in visiting Australia. With this view he left home last February, and now, alas! his friends have to mourn that they will see his face no more, his death having occurred at Deneliquin, New South Wales, on the 28th July.

A pupil of the late William Burn, Noyes engaged in the study of domestic architecture, and although he did not secure a large practice, he enjoyed the confidence of all who consulted him, and erected buildings of considerable merit both in town and country. Latterly, he took much interest in designing Chambers, and, in conjunction with one or two friends who were pleased to be guided by his sound judgment, he erected the buildings which occupy the Piccadilly end of Half Moon Street on the west side, and both sides of Down Street, Mayfair. While in an architectural sense these buildings contrast favourably with those designed by others for a similar purpose, the result has demon-

strated in a striking manner the accuracy of his forecast based on observation, and his friends who were associated with him have good cause to be grateful for his knowledge and wise counsel from which they have derived substantial benefit.

Noyes was at all times actuated by the highest standard of rectitude, apparent—to those who had the opportunity of observing—in his honourable practice. Nothing so excited his righteous indignation as any indication of underhand dealing or of unprofessional conduct. He is mourned by all who knew him, and by none more truly than his life-long friend, the writer of these lines, as a thorough gentleman, a genial companion, and a true friend.

#### Mr. Macvicar Anderson's Portrait.

Members will recall the pleasing function which took place at the Second General Meeting of last Session, when the subscription portrait of Mr. J. Macvicar Anderson, *President* 1891-94, was unveiled and formally presented to the Institute. Sir Arthur Blomfield, A.R.A., who acted as spokesman for the subscribers, bore eloquent testimony to the rare services so unsparingly, so tactfully, and so gracefully performed by Mr. Anderson, first as Hon. Secretary, whose duties he fulfilled for eleven years, and ultimately as President. The proceedings on the occasion, and Sir Arthur's speech, will be found reported in the present volume at p. 58. It now only remains, in accordance with the committee's undertaking, to publish the names of the subscribers, and to render an account of the moneys received. A full list of the donors here follows :—

Cole A. Adams [F.]; Professor Aitchison, [F.] A.R.A., *President*; T. W. Aldwinckle [F.]; W. C. Alexander [H.A.]; A. E. Anscombe [A.]; G. C. Awdry [F.]; Eustace J. A. Balfour [F.], M.A.; R. Shekleton Balfour [A.]; Charles Barry [F.], F.S.A.; G. Beaumont [A.]; Sir Arthur Blomfield [F.], A.R.A.; E. Boardman [F.]; F. Boreham [A.]; C. H. Brodie [A.]; J. W. Brooker [F.]; James Brooks [F.]; J. M. Brydon [F.]; R. H. Burden [F.]; John Butler [F.]; Frank Caws [F.]; W. D. Caröe [F.], M.A., F.S.A.; Arthur Cates [F.]; The late Ewan Christian; R. Clamp [A.]; C. J. Clark [A.]; The late Henry Clutton (Hartswood); Thomas E. Colclutt [F.]; H. H. Collins [F.]; W. T. Conner [A.]; W. G. Cooke [A.]; J. D. Grace [H.A.]; G. R. Crickmay [F.]; The late Henry Crisp (Bristol); Arthur Crow [F.]; Percivall Currey [F.]; Campbell Douglas [F.]; The late H. G. W. Drinkwater (Oxford); J. Dunn [F.]; James Edmeston [F.]; J. S. E. Ellis [F.]; Wm. Emerson, *Hon. Secretary*; C. Evans-Vaughan [F.]; W. Milner Fawcett [F.], M.A., F.S.A.; T. J. Flockton [F.]; H. L. Florence [F.]; Charles Fowler [F.]; Matt. Garbutt [A.]; The Rev. J. M. Geden [H.A.], M.A.; Ernest George [F.]; E. M. Gibbs [F.]; J. Alfred Gotch [F.], F.S.A.; Alex. Graham [F.], F.S.A.; G. E. Grayson [F.]; Ebenezer Gregg [F.]; E. A. Gruning [F.]; W. W. Gwyther [F.]; William Hale [F.]; Edwin T. Hall [F.]; J. S. Hansom [F.]; Henry T. Hare [A.]; William Harrison [A.]; C. S. Haywood [A.]; W. A. Heazell [F.]; John Hebb [F.]; G. T. Hine [F.]; John Holden [F.]; John Honeyman [F.], R.S.A.; T. R. Hooper [A.]; F. W. H. Hunt [F.]; J. Horbury Hunt [F.]; The late R. M. Hunt (New York); B. Ingelow [F.]; C. J. Innocent [F.]; B. Vaughan Johnson [A.], M.A.; George Judge [F.];



R. Keirle [F.]; George Kenyon [A.]; Peter Kerr [F.]; Wm. Kidner [F.]; Zeph. King [F.]; T. E. Knightley [F.]; George Legg [F.]; The late Lord Leighton of Stretton; Hugh Leonard [H.A.]; Professor T. Hayter Lewis [F.], F.S.A.; Messrs. Markby, Stewart & Co.; E. H. Martineau [F.]; D. B. Niven [A.]; The late J. G. Finch Noyes; W. Q. Orchardson [H.A.], R.A.; The late E. G. Paley (Lancaster); J. L. Pearson [F.], R.A., F.S.A.; J. W. Penfold [F.]; Rowland Plumbe [F.]; E. W. Poley [F.]; F. W. Porter [F.]; F. H. Pownall [F.]; John S. Quilter [F.]; Thos. M. Rickman [A.], F.S.A.; Lacy W. Ridge [F.]; R. R. Rowe [F.], M.Inst.C.E., F.S.A.; The late J. P. St. Aubyn; W. Forrest Salmon [F.]; W. H. Seth-Smith [F.]; Edwin Seward [F.]; P. Gordon Smith [F.]; H. Saxon Snell [F.]; Lewis Solomon [F.]; R. Phenè Spiers [F.], F.S.A.; W. L. Spiers [A.]; Hugh Stannus [F.]; H. Heathcote Statham [F.]; Henry Stock [F.]; P. G. Stone [F.], F.S.A.; A. E. Street [F.], M.A.; Larnier Sugden [F.]; John Taylor, C.B. [F.]; S. J. Thacker [A.]; Frederick Todd [F.]; Alfred Waterhouse [F.], R.A.; Paul Waterhouse [F.], M.A.; Aston Webb [F.], F.S.A.; Henry White [F.]; William H. White [F.], *Secretary*; H. H. Wigglesworth [A.]; H. Winstanley [A.]; Robert Williams [F.]; Wm. Woodward [A.]; Thomas Worthington [F.].

The members of the committee in charge of the matter were Sir Arthur Blomfield, A.R.A., Mr. Aston Webb, F.S.A., Mr. A. E. Street, M.A., and Mr. Wm. Emerson. The total subscriptions amounted to £205. 7s. Of this, the sum of £150 was paid to the painter, Mr. Furse. The cost of the frame, £11. 15s., and minor incidental expenses, amounting in all to £5. 2s., having been defrayed, there remained a balance of about £38 at the committee's disposal. The views of the subscribers as to the manner in which this balance should be expended having been elicited, the committee decided to offer Mr. Anderson a silver bowl, inscribed with his name, as a token of esteem and regard from numerous friends and colleagues; with the result that a Georgian bowl, which had been purchased for the purpose, was exhibited in Coventry Street, at Messrs. Lambert's, during a few days in June, where it was seen by a large number of members, and ultimately presented to Mr. Anderson by the committee in person.

## REVIEWS. XLVI.

(127)

### MUCH IN LITTLE.

*A Text-book of the History of Architecture.* By A. D. F. Hamlin, A.M., *Adjunct-Professor of Architecture in the School of Mines, Columbia College.* So. Lond. and New York, 1896. Price 5s. 8d. net. [Messrs. Longmans, Green & Co., Paternoster Row, E.C.]

One has to acknowledge a certain mistrust, in a general way, of the *multum in parvo* system as applied to architectural instruction. Architecture, as some of us understand it, is so much a matter of detail and minutiae, that the attempt to summarise its nature or its history seems bound to fail when carried beyond a certain limit. You may, to be sure, crystallise some epoch of architecture into a neat apothegm that shall please and satisfy both the inventor and those among his

readers and hearers who are sufficiently intimate conoscenti to judge of the fitness of the sentence. But such dicta are not profitable for learning. Except to the knowing they are sheer emptiness. It is thus that architectural summaries are jejune—they may relieve the producer, but are no food to the expectant consumer. A book of essays, to be sure, may touch, and touch with truth, on each of the great kingdoms, and on all the periods of one vast art. But your manual, your single-volume teacher, is a fraud. No, not a fraud, for it means well, but a delusion, or at least a disappointment. These are the grounds on which one shrinks from the very outside of Professor Hamlin's text-book; a compilation of 400 pages which, to do the author justice, sets forth with the avowed intention of merely sketching, and "with the broadest possible strokes," the "various periods and styles of Architecture." With relief, on opening the book it is realised that the author is fully aware of the only possible method under which his work can be of use. He has made of it an index of authorities and of examples. Every chapter is headed by a list of special works dealing with the scope of the chapter; while at the end of each, under the title of monuments, is a carefully prepared catalogue of the principal works which illustrate the period dealt with in the text. There is, besides, at the beginning of the book a list of general authorities, twenty-two in number, among which one is glad to see the *TRANSACTIONS* of our Institute. The list comprises French and German works, as well as those of America and England. These references alone, especially with the addition of adequate illustrations, would serve to save the book from the category of the delusive. It remains to consider the possibilities of a compressed text. Usually it is only possible to summarise the epochs of architecture intelligibly by adopting some theory or theories of evolution or influence, and packing your facts into and around them so as to form a real or fancied machinery of cause and effect. These processes are very open to error; they seduce a writer, and sometimes compel the bending of facts. The bending of facts is bad, but I am inclined to think that so long as the facts are undistorted it is no great matter whether the theory round which the writer groups those facts is false or not. It will, even if it is only three parts of a truth, serve as an aid to memory, and will give the learning student one of those vehicles of association without which it is almost impossible to commit multitudinous items to memory. The worst of it is that these compact volumes fall into the hands of the young, who abuse them. Having no power of discrimination they are uncritical, and put a stamp of infallibility on whatever they find in print. It thus comes about that they assume as incontrovertible principles what are, perhaps, only half-truths or one-eyed inductions. We notice this, and chide it, in the Examinations. Platitudes

that stand none too firmly on their bases are brought to the front by empty memories that hold no facts. This is the one danger of the otherwise permissible process of attaching architectural facts to real or fancied tendencies, influences, or causes. It is in any case of the greatest assistance on occasions where compression is aimed at; perhaps, indeed, it is the only device by which one can effect that amount of omission which will bring architecture into one-volume scope. In truth, handle it as you will, architecture is like that animal suggested in Aristotle's *Poetics*, whom one glance could not comprise.

Professor Hamlin, to be ungraciously just, is not always as neat in definition as a compressionist should be. His description of the Ionic Order (p. 51) would, I think, hardly convey its meaning to a learner—and more than once his glossary is to be convicted of prolix obscurity. The illustrations have the merit of originality. Modern processes make originality possible to an extent unobtainable by the architectural writers of the middle of the century, whose licensed piracy was so universal that one seldom expected novelty in the illustrations, however fresh might be the text. Of course there is much information that a drawing gives, but a process-block from a photograph withholds; but there is incalculable gain in the modern possibility of increased range in the examples, and Professor Hamlin's illustrations are helpful and clear. He does not despise plans, and has more than one interesting photograph from a model. Perhaps it is not captious to object, in passing, to the misleading effect of photographing St. Paul's Cathedral as if the lower order were missing.

I should think that to the student already launched in his studies Professor Hamlin's book would be of real use in assisting him to draw together the information which has often and necessarily to be acquired piecemeal; and certainly the lists of authorities and examples, if rightly and conscientiously used, cannot fail to be valuable.

PAUL WATERHOUSE.

(128)

## THE WALLS OF NEWCASTLE-ON-TYNE.

*The Town Walls of Newcastle-upon-Tyne. A Paper read before the Society of Antiquaries of Newcastle-upon-Tyne, 29th May 1895. By Sheriton Holmes. 80. Newcastle-upon-Tyne, 1896. Price 1s. [Andrew Reid & Co., Ltd., Printing-court Buildings, Newcastle-on-Tyne.]*

This is not a book, but a Paper. It is therefore to be regarded rather as a fragmentary contribution than as a complete work, and needs to be read in conjunction with such works as Mr. Longstaffe's Paper on the Castle of Newcastle (*Archæologia Aeliiana*, vol. iv., p. 124), to which Mr. Holmes refers, and *The Old Roman Wall*, by the late Collingwood Bruce, recently reviewed in the JOURNAL [p. 502].

Mr. Holmes's pamphlet, dealing exclusively as

it does with the Town Walls, and barely mentioning the Castle and its Black Gate, or the Roman Wall, must necessarily to the casual reader appear something like "*Hamlet* without 'the Prince of Denmark.'" But though the pamphlet partakes something of the dryas dust character which necessarily precludes such Papers generally from interesting the ordinary reader, it shows in many ways that its author, were he so disposed, would be well able to supplement this effort by supplying what seems to be the felt want of a complete, but not voluminous, popular book dealing with the history of Newcastle-upon-Tyne as illustrated by its ancient buildings, and showing, as clearly as in these latter days can be shown, how the Old Town Walls of which Mr. Holmes discourses related to the Castle and Black Gate of which Mr. Longstaffe treats; and also how the Castle and its walls, &c., stood in relation to the Old Roman Wall, which was Dr. Bruce's peculiar care, and which, as most people know, intersected Newcastle in its course between its western extremity on the Solway and its eastern extremity at Wallsend-on-Tyne. On these interesting questions Mr. Holmes is silent in the pamphlet under notice; but what he has done, though insufficient, is done so well, that one is encouraged to hope he will at some future date give us a more extended work dealing with the whole subject.

It is well known that, to use the eloquent expression of our Northumbrian orator, Mr. Joseph Cowen, "the walls of Newcastle have again and 'again rolled back the surging tide of war,'" and Mr. Holmes makes incidental allusion to this fact, and supplies a few odd circumstances and details in proof. But the mere dates of successive sieges, and a few names and detached events connected therewith, though well enough in their way, leave untouched and unused a vast amount of antiquarian record, which surely would supply romance enough to make the tale of old Newcastle a very thrilling one if well told. At the same time, it must be allowed that writers of the tales of old cities and old times are prone to sacrifice sober truth on the altar of imagination; and it is because of the evidence the present work affords, that Mr. Holmes would not be likely to make such sacrifice, that one wishes he would undertake the writing of old Newcastle's story.

An amusing instance of what even writers of high character and world-wide reputation are capable of under the strong spell of present imagination, subject to the insufficient restraint of the geographically remote fact, exists in the remarkable vignette (of which fig. 1 is a reduced outline tracing) from the MS. of Froissart, engraved on page 141 of McDermott's translation (second edition, James Parker and Co., Oxford and London, 1879) of Viollet-Le-Duc's *Military Architecture*. This vignette accompanies chap. cxxv., entitled "How King David Bruce of Scotland came with



"his whole army before the Newcastle-on-Tyne." It purports to represent Newcastle, but the most ingenious Novocastrian antiquary will find some difficulty in locating the likeness. This vignette, however, is interesting, though it smacks much more strongly of French than of English castle-building. Its Norman character is shown by the round-headed windows of its unroofed tower, while its Scotch proclivity is betrayed in the crow-stepped gable flanking the other tower, whose

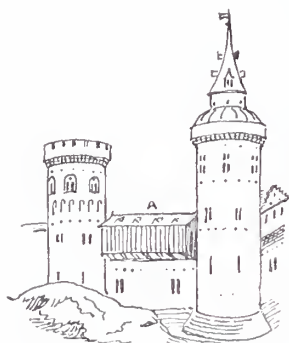


FIG. 1. NEWCASTLE-ON-TYNE, FROM THE MS. OF FROISSART.

roof resembles nothing familiar to the eyes of an old Tynesider, unless it were taken perchance for a bad dream of the lovely lantern of St. Nicholas! The special interest attaching to this vignette will appear in the following extract from the letter-press which accompanies it:—

The MS. of Froissart, in the Imperial Library of Paris, gives a great number of towers arranged in this manner among its vignettes. Many of these drawings show that the timber hoards were retained, together with the stone machicolations, the former being kept for the defence of the curtain walls; and, in point of fact, those two methods of defence were long applied together, the brattishes and hoards of wood being much less costly in the erection than stone machicolations.

The passage throws a strong confirmatory light on the view taken by Mr. Holmes as to the object and purpose of those remarkable corbel stones so clearly shown in his geometrical drawings of Heber tower, reproduced in fig. 2. In describing the tower Mr. Holmes says:—

On the outer face, at a depth of 2 feet 6 inches below the floor level on the top, are corbel stones, two in depth, projecting 4 feet from the wall, for the purpose of carrying an outer parapet or shield, to protect the defenders when casting down stones or other missiles upon those attacking.

It is easy to understand that if, as seems probable, these "shields" or "hoards" were of perishable wood, that fact would account for there being now no trace of any erection remaining on the outer ends of the existing corbels.

The walls of Newcastle are unusually rich in remains of such projecting corbels. For, while those of the Heber tower are so wonderfully well preserved, there are many in other towers of a similar kind in a less perfectly preserved condition. In some cases the corbels are three courses deep (in Durham tower, for example). It seems probable that these three-coursed corbels projected farther than those of the Heber tower, and may on that account have been broken off at their outer ends more readily. It is remarkable that the corbels of Heber tower should have survived so many vicissitudes, and, but for the evidence actual inspection affords, it would be hard to believe that those there now are the original stones.

In this connection, one may remark that probably the dots round the towers and under the front

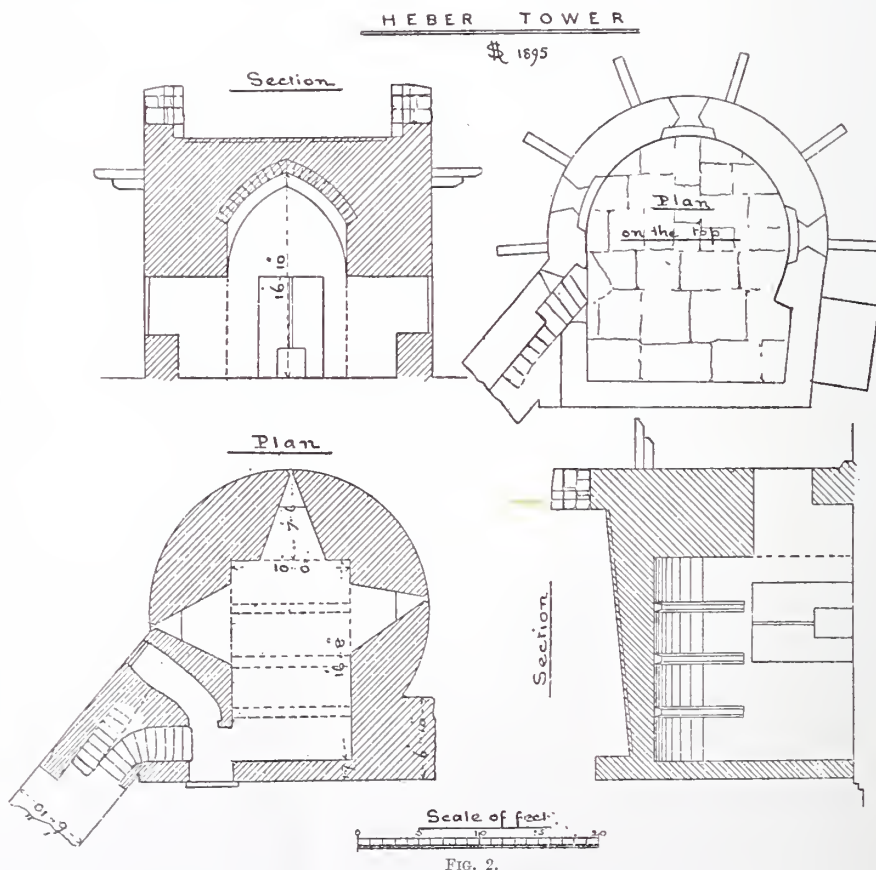


FIG. 2.

hoarding of Froissart's vignette represent holes for the reception of timber cantilevers, to be temporarily run out for the support of additional galleries of defence, should occasion require.

It is a pity that the excellent general map or plan of the tower, showing by firm lines the old walls standing, and by dotted lines the portions no longer standing, is not so folded in the binding of the pamphlet as to save the reader the inconvenience of having repeatedly to turn back to it for reference. This, however, is a trifling

and followed the invention and application of steam-engine, locomotive, steam-ships, chemical products, and Armstrong guns; and is the centre also of the coal trade. Not at the ordinary rate of natural growth and decay does the new world rise and the old world sink at Newcastle-on-Tyne. But with almost the ruthless speed of a volcanic eruption is the "old order" being overthrown and submerged there beneath majestic piles of modern architecture; so that we may in another generation search and sigh in vain for one more glance at the old walls which Mr. Holmes has so ably striven to perpetuate in his little memorial volume.

The Black Gate, of which (as pertaining rather to the castle walls than to the town walls) Mr. Holmes does not treat, has already been admirably restored. A sketch made of it twenty-seven years ago is reproduced [fig. 3], and substantially it is still much the same as of yore. It stands hard by the castle, and was built in 1268. Immediately behind the Black Gate there still remains a veritable "old Newcastle" street, as quaint and interesting as the "Old London" which charmed visitors to the Exhibition at Kensington a few years ago. But this "old Newcastle" street is really old; and, unfortunately, its age is accompanied by squalor in place of reverence. It is a street which the artist would wish to stand for ever, as ardently as the sanitarian would wish it "improved" off the face of the earth. If now the artist, antiquary, and sanitarian could enter into a "triple alli-

"ance" over the treatment of this old-world street behind the Black Gate, something worth their doing might even yet be accomplished.

Newcastle.

FRANK CAWS.

(129)

### HERALDRY.

*A Treatise on Heraldry, British and Foreign, with English and French Glossaries. New and enlarged edition. By John Woodward, LL.D., Rector of St. Mary's Church, Montrose. 2 vols. 8o. Edin. and London, 1896. Price, cloth, £2. 15s. net; half-bound morocco, £3 net. [Messrs. W. & A. K. Johnston, Edina Works, Easter Road, Edinburgh; 5, White Hart Street, Warwick Lane, London, E.C.]*

In a notice of the first edition of this work, which was published in 1892,\* Mr. Purdue with good reason described it as the best book on the subject which had been written up to that time. No rival has appeared in the interval, but Dr. Woodward has by no means been content to rest upon his laurels and to satisfy the demand for more copies of the book by a mere re-issue, even

\* See R.I.B.A. JOURNAL, Vol. VIII. N.S. pp. 350-51.



FIG. 3.—THE OLD BLACK GATE, NEWCASTLE-UPON-TYNE.

matter in comparison with the very great help the map affords to a careful following of the author's descriptions and sketches.

It would be well if the Society before whom this excellent Paper was read would represent to the County Council of Newcastle-on-Tyne the urgent need for protecting the remains of the old town walls from interference and injury, so far as they lawfully can. And if at comparatively small cost they would pave the exposed tops of the walls with asphalt, at the same time re-pointing open joints in water-tableing, &c., in cement, they would greatly prolong the life of these interesting historic remains. Even in the quiet south of England market-towns, and in out-of-the-way country places, "far from the "madding crowd," the old castles, abbeys, and churches, yielding to inevitable age and infirmity, demand our loving care. But such care is much more urgently needed in behalf of ancient buildings in a city like Newcastle-on-Tyne, which is not only the metropolis of the North, but the very centre and birthplace of that gigantic commercial and general upheaval which has attended



with corrections, of the first edition. This "new" and enlarged edition," for which Dr. Woodward is solely responsible, the original one having been in part the work of the late Dr. Burnett, is substantially a new book, and is as distinctly in advance of its own predecessor as was the latter of all older heraldic treatises. Besides a general revision and re-arrangement of the whole work, many of its chapters have been entirely re-written, several new chapters and appendices added, and the number and importance of the illustrations considerably increased. The coats represented, which number several hundreds, are well drawn, and have the special merit of being, in nearly all cases, fully tintured. This, besides adding immensely to the general attractiveness of the book, gives a kind of reality to the coats which is sadly lacking in the common engraved illustrations; colour is an essential factor in all heraldic design, and deprived of its characteristic colouring heraldry loses more than half its charm. Still, as it is not always possible to depict red lions or golden eagles in their rightful splendour, it is important to understand the conventional method of indicating their tinctures when lines only can be employed. For this purpose a plate is given, which will be very useful to beginners in the science, wherein the several colours and metals with their respective equivalent hatchings are shown side by side, on shields arranged in pairs, so that the method of representing each tincture can be easily grasped and remembered.

With the exception of the late Canon Jenkins, in his little book on *Heraldry, English and Foreign*, English writers of heraldic manuals have been accustomed to treat the subject from a much too narrow point of view. Most English authors seem to ignore the great interest and value of a comparative study of English and Continental systems, and seem disposed to look down upon all foreign armoury as eccentric and capricious, on account of its not exactly conforming to English practice. This reproach Dr. Woodward has entirely swept away. He displays as intimate a knowledge of Continental usages, and of the authorities for them, as of everything that belongs to English and Scottish heraldry, and his illustrations and comparisons are drawn, not only from the comparatively familiar French, German, and Italian sources, but from every corner of Europe. His book thus forms an excellent encyclopædia of the whole science; though it is only fair to say that Dr. Woodward's style is more vivacious than that of most encyclopædias, and he evidently has a keen appreciation of the humorous side of things. He writes in such a perfectly simple, common-sense manner that people who have been repelled by the pomposity, extravagance, or want of veracity, too often characteristic of heraldic literature, ought to be encouraged to make another attempt, under his auspices, at acquiring at least a general knowledge of the subject. In Mr. Purdue's review, already

mentioned, the utility and dignity of heraldry have been amply vindicated. Its connection with architecture and its claims upon the attention of architects seem too obvious to need insisting on. The pursuit is indeed one of the pleasantest of the many pleasant by-paths which lie ever open to the architect who cares to deviate from the ruts of the highway. For such rambles no better guide than Dr. Woodward could be found, and his book is besides so fully furnished with aids to the inquirer in the shape of glossaries, tables, and a most complete index, so comprehensive, and so scrupulously accurate, that it must remain for many years the standard work of reference for all branches of heraldry.

It is rather to be regretted that the glossary does not contain the word "blazon," for no heraldic term is more absurdly and persistently misused by amateurs and general writers, most of whom seem to imagine that "blazoned" is synonymous with "coloured," i.e. "tintured." For instance, in an article on monumental brasses in a contemporary periodical, a tomb is described, on which "are no less than eight shields, all 'with the original colouring or 'blazonry' in 'perfect condition.'" As "blazoning" a coat simply means describing it verbally or in writing, as opposed to representing it by drawing, nothing could be farther from truthful description than such employment of the word; and yet we constantly hear coloured drawings described as being "heraldically blazoned." The Rules of Blazon are fully and distinctly set down in their proper place in the book, but a definition, with perhaps a word of warning, inserted in the glossary would greatly assist the general reader to a clear apprehension of the term. In his key-plate of tinctures the author has wisely, I venture to think, included those generally despised and abused, but nevertheless both historical and useful, colours, Tenny and Sanguine, with their respective hatchings; he also mentions the existence, in Continental armoury, of Ash Grey (*Cendrée*); and, just to make the list complete, might also have given its appropriate hatching, namely, vertical and horizontal broken lines crossing, or a series of dashes in alternate directions, derived apparently from the crossed lines of Sable. A reference on page 124 to page 46 really belongs to page 47, but with this trifling exception misprints seem as scarce in Dr. Woodward's careful pages as snakes in the land of St. Patrick.

ARTHUR S. FLOWER.

## NOTES, QUERIES, AND REPLIES.

### Monastic and Lay Craftsmen of the Middle Ages [p. 513].

From the President, Prof. AITCHISON [F.], A.R.A.—

It is always a pleasure to read one of Professor Baldwin Brown's Papers, not only from the complete and scholarly way in which he treats the

subject, but also from his peculiarly graceful style. In this case I owe my acquaintance with Dr. Springer's tract to him. Dr. Springer draws attention to the fact, that because a monument is attributed to a king or a bishop by a writer of the time, we are not on that account to attribute architectural skill to either of them, but only to understand that the king or bishop ordered the monument and paid for it. The great Agrippa had probably as little share in the design of his original Pantheon as I had. There are, however, one or two things I should like to know—for example, why Professor Baldwin Brown concludes that Theophilus was a German monk. And why he objects to the bas-relief on Athené's shield. He speaks of it as a reproduction. Is there any authentic copy extant? The Athené of the Borghese gallery, supposed to be a copy of that in ivory and gold, is without a shield. He is certainly justified in saying that artists were found amongst the monks, for M. Jusserand, in his *Literary History of the English People*, tells us of a monk who made a crucifix and used a nude model; even if we were without the instance of Fra Angelico (1387–1455), and others after him.

I, too, was puzzled when I read in Pliny's description of Pheidias's Chryselephantine statue of Athené, that the wars of the Lapithæ and Centaurs were carved on the edges of the soles of her sandals; it looked like misspent labour; but I took a different view when I found the gold heel of a shoe in the British Museum carved with figures in high relief; in the case of the heel, the figures were those of Hercules and Nereids riding on Hippocamps. It was evidently the fashion for high-born ladies to have these carved gold appendages, and Pheidias, naturally, would not represent the tutelary goddess in unfashionable attire.

Speculations on epochs of fine art are always interesting, and still more interesting are those on the conditions that actuated the artists and craftsmen to do their best. In the periods they were most written about, so little is known of their intimate life, that we may almost advocate any theory we please; though it seems that at the turn of Fortune's wheel one subject of interest is in the air and another in the mud. Two theories at least are open to us about the artists and craftsmen of Romanesque times. The academic theory, that they were all taught at the abbeys under the great men of the day, and that there was a sufficient intercourse among the abbeys to make the general scheme alike, although there was enough local isolation to give a smack of the soil to each;—and the devotional view:

Who builds a house to God and not to fame  
Will never mark the marble with his name.

This, however, is clear, that if artists and craftsmen worked in small republics whose citizens

loved beauty and art, they were more stimulated to exertion by the fame they got among their fellow-townsmen than if they worked for a great aristocrat, or for a great city with an aristocratic constitution; in either case they were treated with contempt, and barely tolerated. Where husbandry, fighting, law-making, and public-speaking are alone honoured, the fine arts are in a bad case. The way that virtuosos Cicero dealt with the great Greek artists to please his audience was characteristic. "This fellow Verres had a liking for the works of a Greek mechanic, whose name I have forgotten." To his secretary, "Do you recollect his name?" "Polycleitus." "Thank you!" "This Greek mechanic's name was Polycleitus." Plutarch, Trajan's intimate, professed contempt for artists, as did Virgil before him, to please their audiences. The Roman view of the fine arts is like the contempt for music expressed in Swift's lines about Handel and Bononcini:

Strange that such difference should be  
'Twixt Tweedledum and Tweedledee.

All reasoning *à priori* on teaching is useless. The goodness or badness of any scheme of teaching is only to be ascertained by experience; and though you may teach most men how to shoe a horse or mend a kettle, when you come to the higher arts, even those much inferior to the fine arts, the main value of teaching is to find out those very few who can learn. Mediæval art was brought more closely into conjunction with buildings than almost any other, and before the mediævals could paint decently, they respected the wall; but directly they began to paint well, the wall was merely their canvas, as it was afterwards in Renaissance time.

One simile that Professor Baldwin Brown uses is strange to me. He is speaking of Mediæval ornament, and says it is "in as intimate relation to the fabric as the flower to the plant." To me nothing is so mysterious and so little related to the plant as the flower. Its colour attracts bees and other day insects; its scent attracts those that fly by night, and they fertilise it. The colour of the leaves always harmonises with the flower, or forms a strong contrast with it; but the relation of the flower to the plant is a marvel. In gardens where new flowers are grown, one speculates on what the flower will be like, and why. Why should the lance-shaped leaf of one plant have the snapdragon for a flower, and that of another the lily? Why should one have a cockscomb, one of the flowers of most mysterious shape? Some plants, like the arum and the datura, have trumpet-shaped flowers, while others are made up of hundreds of little blossoms grouped together, like the "travellers' joy," the "ladies' pincushion," and "cherry-pie." Some large-leaved plants have small flowers, and some the reverse; in some the end leaves become coloured, like the feathered cockscomb and the bougainvilleas. Doubtless, if



we could find it out, the shape and size of every flower are a necessary consequence, but at present we have not the faintest glimmer why it is so.

Every reader of Professor Baldwin Brown's Paper will be as grateful for it as I am, for it not only treats the subject admirably, but stimulates one to think on other important subjects. If architects could be got to have views not wholly divergent, the united talent of England alone, not to speak of Christendom, would take us very far indeed, I think, beyond anything that has gone before.

"Stucco Lustrò" [p. 508].

From WILLIAM SCOTT, *Soane Medallist* 1877—

The "stucco lustrò" referred to by Mr. William Young [F.] is evidently what is more usually known here in Italy as "stucco lucido," *lustrò* and *lucido* having practically the same meaning.

The work is extensively used for the walls of corridors, schools, hospitals, &c., where it is desirable to have a very smooth surface, to which disease germs or ordinary dirt do not readily attach themselves, and which can be easily cleaned.

The process of working is simple enough. The wall is first "rendered" in the ordinary way as for common plastering, then "floated" with a finer coat, and when this is sufficiently set the "arricciatura"\* is given for the sake of the key; and, lastly, two successive very thin coats of "stucco," consisting of rather weak lime and fine marble dust—so thin that the two coats together shall not be more than 2 millimetri (less than  $\frac{1}{8}$  inch) in thickness—are laid very evenly and smoothly. So soon as this last application begins to dry, it is worked all over—in fact, *lustrato* or *lucidato* (polished), hence the name—with smooth, flat iron tools, about 8 or 10 inches long, and about  $1\frac{1}{2}$  inch thick, made and kept hot in a small charcoal fire close at hand, the amount of pressure being regulated by the amount of dryness attained by the stucco; the greater the dryness the heavier the pressure required, and *vice versa*.

The amount of polish, or *lustrò*, attained by a skilled workman is very considerable, and it increases afterwards instead of suffering by wear or friction, as, for instance, in school corridors, &c.

It is, of course, essential that each portion commenced should be finished straight away, as if left to dry absolutely, it would take no polish.

I am assured that when this stucco is executed with lime and white marble dust,† the white is absolutely unchangeable; and the custom here is to mix a small quantity of blue with the last coating to take off the extreme whiteness.

In case a colouring is required, the desired tint

\* "Arricciatura" = curling, because, in Italy, the scratching for the key is always done in curls.—W. S.

† This is the famous "Chunam" used in India, a beautiful example of which may be seen in the great columns of the Ball-room at Government House, Calcutta.

is mixed with the last thin coating, and grey or other coloured marble dust is used instead of white; and when this has dried somewhat, additional colouring, veining, marbling, or patterns, &c., are executed with a brush before the hot irons are applied.

The colouring is mixed with a basis of lime, and many different ingredients, or *media*, are used by the various workers to obtain the necessary quality in the colouring coat; but these things are kept very closely as trade secrets. We know, however, that the principal articles are soap and virgin wax run together, to which some add alum, or grease of various kinds in small quantities, spermaceti, &c.

The cost varies from 2 or  $2\frac{1}{2}$  francs per square metre for ordinary work in easily accessible positions to 3 or  $3\frac{1}{2}$  francs for superior work, when all the materials for the stucco coats and colouring are provided by the worker, but without the first rough plastering.

*Bordighera.*

#### The Valley of the Fleet.

From JOHN HEBB [F.]—

Among the numerous projects for obviating the ascent and descent of Holborn Hill was one in the year 1851, by the late Mr. Robert Hesketh, architect, for a high-level street from St. Paul's Churchyard, near the western end of the Cathedral, to Holborn, opposite Hatton Garden. The street was proposed to be carried through Old Bailey (the present levels being preserved), over Farringdon Street by a bridge with a headway of 20 feet through Farringdon Market, across Shoe Lane (at a level), and terminating in Holborn between Thavies Inn and Bartlett's Buildings. The value of the property to be purchased, less the value of the building materials, was estimated at £170,000, and the cost of the works £14,000, making together a sum of £184,000, which must be considered inadequate for the construction of a street about three and a half furlongs, or nearly half a mile, long and sixty feet wide. When it is remembered that Stationers' Hall, part of Old Bailey Sessions House, and part of the burial-ground of St. Andrew's, Holborn, were proposed to be taken, some idea may be formed of the insufficiency of the estimate of the cost of the undertaking. If this proposal had been carried out, the descent into the valley of the Fleet would have remained unaltered, and it is a matter for congratulation that wiser counsels prevailed, and that the Corporation of London were not induced from motives of economy to adopt a scheme which would at the best have been merely a palliative of a crying and patiently endured evil. The bridging of the Fleet valley was advocated by James Howell, the author of *Epistolæ Ho-eliæ*, in the reign of Charles I., and it was not until the reign of Victoria that it was accomplished.



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